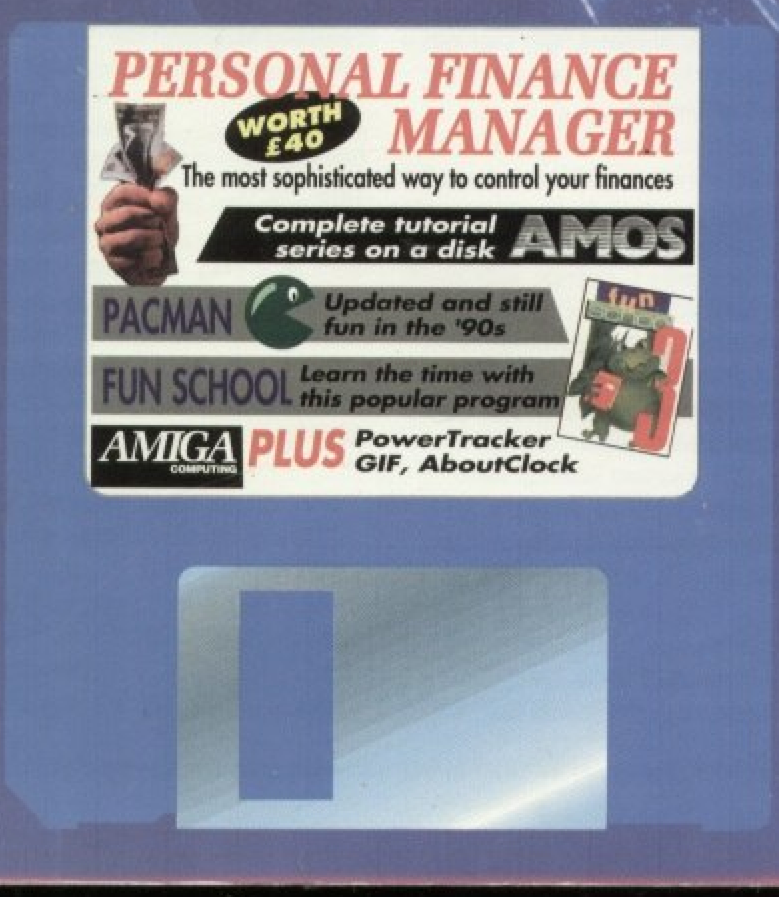
Issue 59 ● April 1993 ● £2.99 Overseas price £3.25

# AMIGA COMPUTING

**FREE! WORTH £40**
**Personal Finance Manager**
**Complete working package**

# FREEZE FRAME!

**Video digitisers examined, explained - and exploded!**

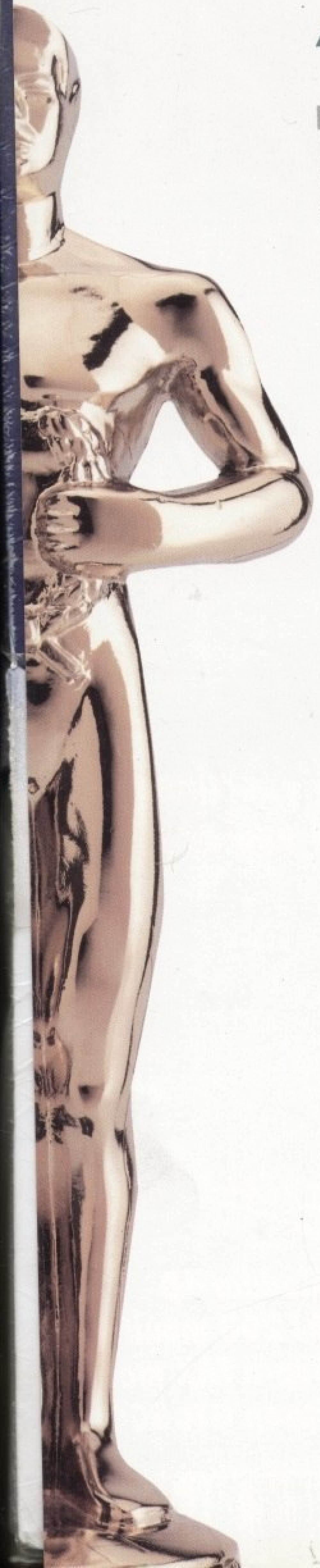



*Plus!*

- Aladdin 4D
- A1200 monitors
- Supra FAX modem
- Epson GT6500

04> 9 770959 963053

# Award winning innovative products fro[m] Po[wer]



## Scanners

***"If your in the market for a hand scanner then forget the rest and get Powerscan"***
Amiga Format — July 1992

### Power Scanner v3.0



- 100-400 DPI scanning resolutions
- 64 greyscales
- Thru'port for printer
- Award winning editing, image manipulation & scanning software

Power Scanner v3.0 .......................... £115
Power Scanner Colour ...................... £239
v3.0 Upgrade (inc. interface).. £49.95
v3.0 Software upgrade for Power Scanner users (send SAE) ........... £15

### Epson GT-6500



- 600 DPI Colour flatbed scanner
- 24-bit colour
- Software included

GT-6500 inc. Powerscan v3.0 ........... £799
GT-6500 inc. ASDG Software............ £899
Transparency Adaptor Unit.............. £499
Document Feeder................................ £399

### Epson GT-8000

- 800 DPI colour flatbed scanner
- 24-bit colour
- 16.7 million colours
- 256 greyscale
- Scan line art images
- Optional automatic document feeder
- Optional transparency adaptor
- Software included

GT-8000 inc. ASDG Software......... £1199
Transparency Adaptor Unit.............. £499
Document Feeder................................ £399

## Floppy Drives

***"This drive contains more gadgets than Batman's utility belt"***
Amiga Computing — Feb1992

### PC880B Power Drive



- Award winning drive manufactured by Power Computing
- Super slim design
- Anti-click (Cures that annoying click)
- Virus blocker (Prevents viruses)
- Built-in backup hardware

PC880B with Blitz Amiga ...................... £60
PC880B with Blitz & XCopy ................. £75
PC880B (Cyclone compatible)* .......... £65
PC880B in black case ......................... £65

*This drive is only available to registered owners of XCopy Professional. You must provide proof of purchase of XCopy Professional

### Power Drives

PC880E Economy drive ................. £49.95
PC881 A500 Internal drive ............ £45.00
PC882 A2000 Internal drive .......... £45.00

### Dual Drive

- Two high quality disk drives built into one compact unit
- Same features as PC880B

Dual drive ............................................ £125

## Blitz Amiga

- Backup disks at lightning speeds
- Stops all external drives from clicking
- Contains anti-virus from being written into the bootblocker

Blitz Amiga ........................................... £20

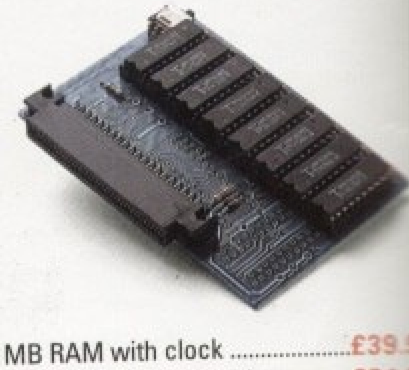
## Blizzard Turbo

- For the A500/A500+
- Expand up to 8MB (0K installed)
- Memory and 68000 CPU run at 14.28MHz
- Fast 68000 processor installed on-board
- Fully auto-configuring
- Optical 512K shadow RAM on extra memory bank for shadowing the operating system out of ROM or from disk

Blizzard Turbo ...................................... £129
Blizzard Turbo 2MB RAM.................... £185
B' Turbo 2MB RAM + 256K Shadow RAM .. £199

## RAM Expansions

### A600 Memory Cards



1MB RAM with clock ...................... £39.9
1MB RAM without clock ............... £34.9

### PC501+ RAM Card

Our RAM board is designed especially for the A500+ computer and comes with 1MB of RAM on board to expand your memory to 2MB of chip RAM. Plug-in and go operation (Fits into the trapdoor)

PC501+ RAM card ......................... £35.9

### 8MB Power Board

- Plugs into side slot, fully auto config, ful[l] thru'port. Expand 2MB-8MB

2MB £109 4MB £169 8MB £28
1 x 4ZIP chips ................................ £14.9

### 1.5MB RAM Board

- Fully supports 1MB of chip RAM
- Fully compatible with Fatter Agnus

(Kickstart 1.3 and above, not compatible with A500+)
(Your Amiga needs to be opened, this may effect your warranty)

1.5MB RAM board ................................ £8

### 1MB with Thru'port

- Expand your A500's memory up to a total of 2MB without disposing of your existing 512K upgrade
- Works with 1MB of Chip RAM

(512K RAM must be 4 chip type or not exceeding 9cm in length)
(Your Amiga needs to be opened, this may effect your Warranty)

1MB with thru'port ............................. £4

### A500 RAM Card

- 512K RAM expansion with clock & free software (A500+ compatible)

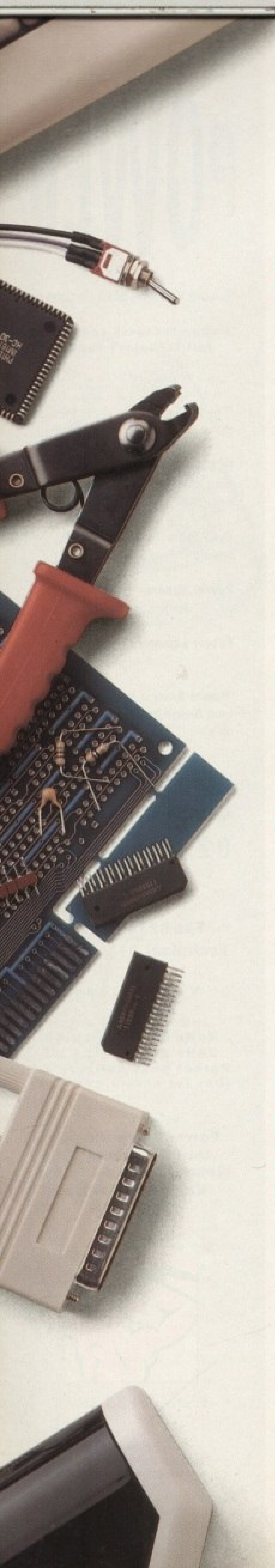
512K RAM (4 chip) with clock .............. £2
512K RAM without clock ..................... £2

### PCMCIA Memory

- Ultra slim memory cards
- 2MB Memory card
- SRAM Memory
- For the A600/A1200

2MB Memory card ............................. £14

Power Computing, France, 15 Bld Voltiare 75011, Paris, France. Tel (1) 43386206 (6 lines) Fax (1) 4338



# Award winning innovative products from Power Computing Ltd

## A2000 Hard Cards

### GVP Series 2 HD
- Up to 8Mb SIMM RAM on-board
- Supports external SCSI devices
- 14MHz SCSI controller

| | |
|---|---|
| Bare | £129 |
| 40MB | £249 |
| 80MB | £319 |
| 160MB | £449 |
| 200MB | £549 |

### Bare SCSI Hard Drive
- SCSI or IDE 3.5"

| | |
|---|---|
| 80MB | £199 |
| 160MB | £329 |
| 200MB | £499 |

(Suitable for GVP G-Force, GVP HD or Nexus HC)

**Other sizes of HD available, please call**

### 1Gigabyte HD
- Internal Hard Drive
- A1500/A2000

| | |
|---|---|
| 1GB Hard Drive | £999 |

## Power Board
- New RAM board from Power
- A1500 / A2000 RAM board

| | |
|---|---|
| 2MB | £99 |
| 4MB | £149 |
| 8MB | £239 |

## Macintosh Emulator

| | |
|---|---|
| AMax-II Plus | £299 |

(Mac ROM Chips required)

## Commodore Amiga
- Amiga 4000 includes
- 68040 micro processor
- 25MHz clock speed
- 16.8 million colour palatte
- Display up to 256,000 colours on screen
- Built-in 3.5" high density disk drive

| | |
|---|---|
| Amiga 4000 & 120MB HD | £2099 |
| Amiga 3000 & 52MB HD | £1299 |
| Amiga 3000 & 105MB HD | £1499 |
| Amiga 3000T 100MB HD 5MB RAM | £1999 |
| Amiga 3000T 200 MB HD 5MB RAM | £2499 |

## Amiga Accessories

| | |
|---|---|
| A2300 Genlock | £57 |
| A2065 Ethernet | £245 |
| A2232 Serial Card | £104 |
| A2320 Display Enhancer | £163 |

## OpalVision
- 24-bit graphic card
- 16.8 million colours available
- Equipped with 1.5MB of display RAM
- Opal Paint 24-bit painting
- Opal Presents
- King of Karate

| | |
|---|---|
| OpalVision | £699 |

**More information available**

OpalVision roaster chip available soon

## Monitors

### Philips CM8833 Mk2
- With cable
- Available with Lotus Turbo Challenge 2
- On-site maintenance

| | |
|---|---|
| CM8833 Mk2 | £239 |

### Other Monitors

| | |
|---|---|
| Commodore 1084S | £199 |
| Commodore 1960 TRI-SYNC | £479 |
| NEC Multisync 4FG | £549 |

## ICD Flicker Fixer

### Flicker Free Video 2
- Stop that annoying flicker
- Fits internally in the A500
- Multi-sync monitor required

| | |
|---|---|
| Flicker Free Video 2 | £199 |

## Music



- The complete music kit for the Amiga
- Includes:
- Music Kit package
- Real Time Sound II
- Over 32 special efffects
- Can work with MIDI instruments
- Digital Studio III
- Midi interface
- Stereo sound digitiser
- Stereo speakers
- All leads & software

| | |
|---|---|
| The Music Pack | £69.95 |
| Speakers only | £15.95 |
| Midi interface | £15.95 |

## Optical Hard Drive



- Manufactured by Power Computing
- 128MB on one optical disk
- Read and write optical disks
- 40ms running speed
- Built-in power supply
- High power cooling fan
- 25-way and 50-way SCSI ports
- Thru'port built-in
- SCSI ID switch
- Compatible with major SCSI controllers

| | |
|---|---|
| 128MB optical drive (Internal) | £729 |
| 128MB optical drive (External) | £999 |
| 128MB 3.5" optical disk | £39.95 each |
| SCSI controller card for A1500 / A2000 | £129 |

(Compatible with Amiga, PC, and Mac. A SCSI controller is required on the Amiga and PC)

## Floptical Disk Drive
- Stores 20MB on one 3½" disk
- Cost effective mass storage unit
- Can be used as a 1.44MB floppy with Amiga DOS and AMAX
- AMAX compatible with DMI Mac driver
- Packs an entire back-up onto one floppy
- Additional disks available
- Internal version for A1500/2000/3000
- External version for A500
- SCSI Interface required

| | |
|---|---|
| Internal A2000 kit | £289 |
| Internal A3000 kit | £289 |
| External A500 kit | £389 |
| A1500 | £599 |

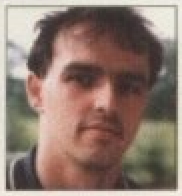
## Accelerator

### GVP G-Force
- 68030 accelerator board
- 68882 Maths co-processor

| | |
|---|---|
| 25MHz 1MB RAM | £499 |
| 40MHz 4MB RAM | £759 |
| 50MHz 4MB RAM | £1099 |
| Hard drive mount kit | £35 |
| 68040 Fusion 40 inc. 4MB | £999 |
| 68040 Pro-Peripherals inc. 4MB | £999 |
| 1MB x 8SIMM | £25 |
| SIMM 32 x 4MB-60 | £179 |
| SIMM 32 x 1MB-60 | £59 |

**Power Computing, France, 15 Bld Voltiare 75011, Paris, France. Tel (1) 43386206 (6 lines) Fax (1) 43380028**

# CONTENTS



*It would be great to be able to sum up this month's issue in a simple sentence, but there's such a diversity of content that to do so would be impossible. Suffice to say there should be something to suit all tastes.*

*For a start, we have the latest in our continuing series of supertests, this time concentrating on the best video digitisers around.*

*Judging from replies to our reader surveys, roundups and supertests meet with a mixed response. There are those – in the majority – who find them informative and a good comparative study of an area, and a smaller number of readers who resent the duplication of information inherent in such an article.*

*Perhaps those with strong feelings on whether or not supertests are a good idea can write to ESP and let us know?*

*Those comms users who might have been despairing of an interesting event in their otherwise dull existences might like to cast a jaded telephonic eye over the Supra FAXModem review, and 3D freaks can find in Aladdin 4D yet another excuse to spend innumerable hours in front of an Amiga screen.*

*For the canvas-shy artist we have Personal Paint, a new 256-colour package, and our budget musicians can make the most of shareware and PD offerings with our special feature.*

*Finally, take a look at the all-new Almanac section, which this month has been given a complete facelift and a name change. Insight, as we've chosen to call it, should hopefully continue to offer insight into the whole spectrum of Amiga use.*


| | |
|---|---|
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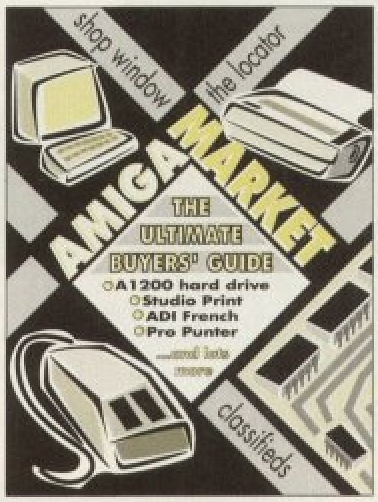


europress ENTERPRISE

For four years *Amiga Computing* has been the leading magazine for Amiga enthusiasts. As a key member of the Europress magazine group, *Amiga Computing* promises to inform, educate and entertain its readers each month with the most dedicated coverage of the Amiga available.

*Amiga Computing • Atari ST User • PC Today • Acorn Computing • GB Action Amiga Action ST Action • Commodore Force • Sega Force N-Force • Amiga Force • Bad Influence Super Action • PC Home*

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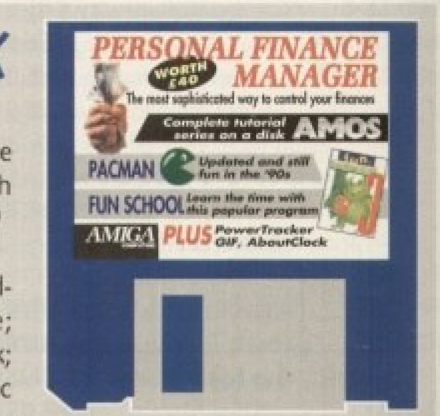

# Amiga Market



## THE COVERDISK

**FREE! – Personal Finance Manager**
A fully-featured budgeting package designed to help those pennies stretch further than ever before. WORTH £29.99

**PLUS:** Pacman Deluxe, a brilliant modern version of the old favourite; AboutClock; a superb Workbench clock; PowerTracker v3.01 for all your music sequencing needs; and a GIF datatype for Workbench 3.0 users. All this packed into one bristling disk!




**Page 22**

## GAMER

*The best of the latest games, plus previews, news and playing guides – and it all starts on page 95!*



*Galactic Warrior Rats*

## Competitions

*Check out page 105 and win a superb gaming prize!*

*Did you win one of last month's great prizes? See page 57 now!*

## Don't miss our fantastic offers for subscribers

*see page 62 now!*

## AMIGA insight

*Covering all the Amiga's most exciting areas of interest, Amiga Insight offers monthly news and expert views for the seasoned user and beginner alike*

### Nine pages of applications for the Amiga

# REGULARS



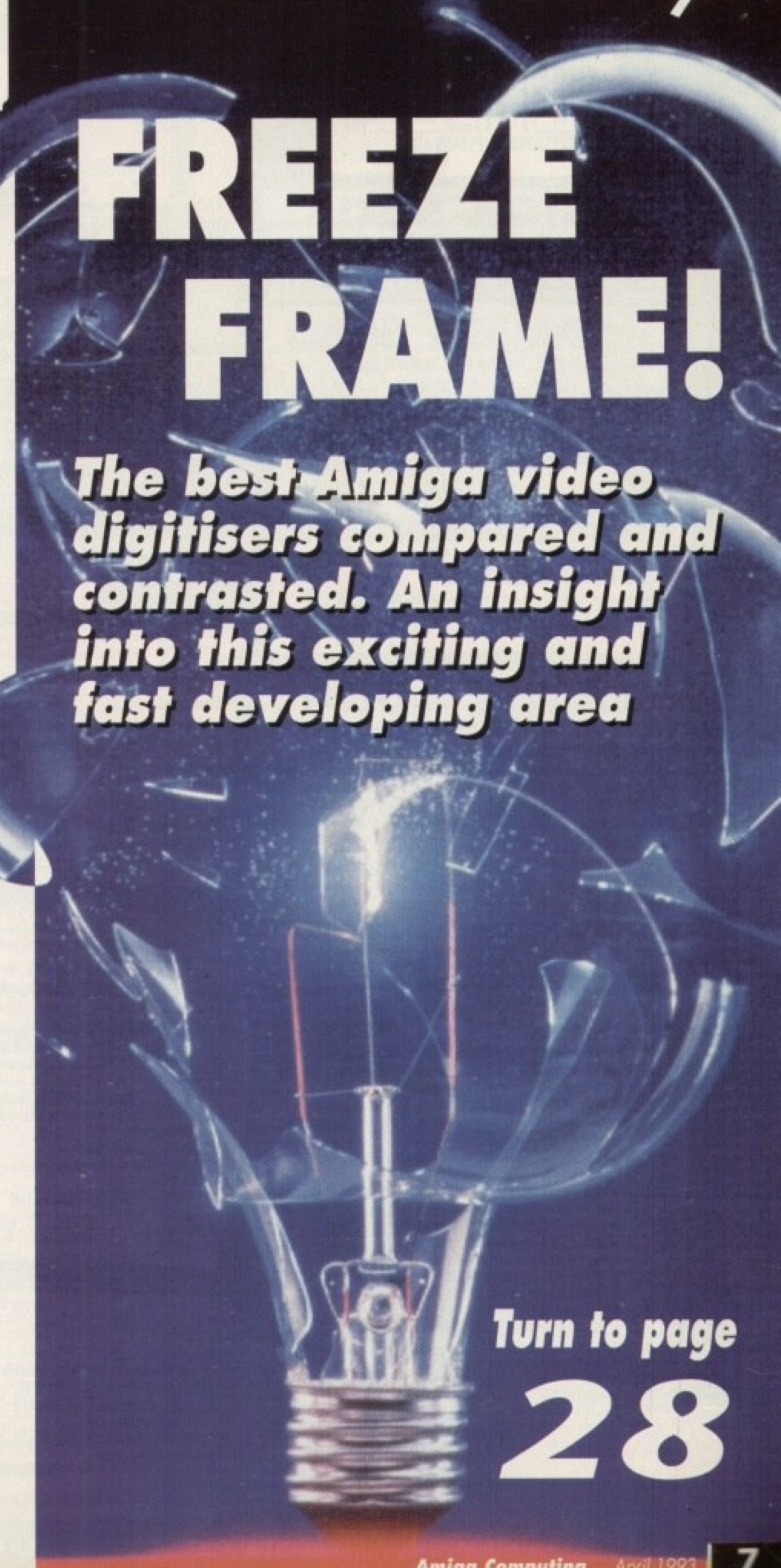
# FEATURES



# REVIEWS



# COVER Story



# FREEZE FRAME!

**The best Amiga video digitisers compared and contrasted. An insight into this exciting and fast developing area**

Turn to page 28

# Hobbyte

COMPUTING
ESTABLISHED 8 YEARS

10 MARKET PLACE ST ALBANS
HERTS AL3 5DG TEL: (0727) 856005/841396
THE GALLERY ARNDALE CENTRE LUTON
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CALLERS WELCOME AT OUR BRANCHES OPEN 9-5.30, MONDAY TO SATURDAY, (10-4.30 SUNDAYS ST ALBANS ONLY)

## WARNING

Due to the exchange rate , many items in this ad will increase in price - including some CBM, HP + Philips product.
At the time of going to press we are unable to confirm the extent or date of the increases, therefore, all prices must be confirmed by telephone before ordering.

## HOW TO USE THIS AD

For the first time ever, you can choose your own Amiga and software combination, and still benefit from the huge savings only available from package deals. Want an A500 with 1500 software? No problem! Like an A1500 without games? It's up to you! All we ask is that you choose at least 1 software pack when you order your hardware (optional on CDTV, A3000 or A4000)

## WE WANT TO BEAT ALL PRICES!

CALL US!!

## OLD AMIGA TRADE-IN

The best trade-in allowance, extra for peripherals and accessories. Trade in your old machine for a brand new A600/ A1500/1200/3000/4000/CDTV or even PC.
A limited number of refurbished A500/1500/3000s are available, complete with 3 months warranty.

**A500s FROM £179**
**A1500s FROM £299**

| | | | |
|---|---|---|---|
| A600 1MB | (mint) 219 | 1500 HD+Controllers | |
| A600 20HD | (mint) 219 | 40MB | FROM 199 |
| A3000s | FROM 899 | 120MB | FROM 379 |
| CDTV | FROM 249 | Action Replay | 39 |
| A590 20/40MB | 99/129 | XT B Board | 79 |
| Flicker Fixer 1500 | 79 | AT B Board | 149 |

OTHER ACCESSORIES - PLEASE ASK.

## AMIGA 500+ £229.95

LIMITED NUMBER AVAILABLE - PHONE!

## AMIGA 3000

TRADE IN AVAILABLE

12 MONTH ON-SITE MAINTENANCE

Latest version, 68030 25MHz, 3.5" 880K FD + spare drive bay (or 4 spare bays on Tower),512K 32 bit ROM, 4 Zorro III, slots with 2PC AT slots (or I CPU, 7 Zorro III, 2 PC AT on Tower), hard drive and memory as below:

| DESKTOP | 52MB | 120MB |
|---|---|---|
| 1MB video + 1MB Fast Ram | 1199 | 1289 |
| 2MB video + 4MB Fast Ram | 1349 | 1439 |
| 2MB video + 8MB Fast Ram | 1489 | 1579 |

WITH FREE AMIGA VISION

With extra 4MB Fast RAM (fitted if required)ADD £169.99
With Philips SVGA 28dpi inc. tilt & swivelADD £259.00

## AMIGA 4000

MULTIMEDIA AMIGA

New AGA Chip Set + blistering 68040 processor, 256,000 colours from 16.6 million, scan doubling for flicker free display, 25 MHz, Mouse, Amiga 3.5"/1.76 MB 3.5" drive Plus Cross DOS for transfer of files between Amiga DOS +MS DOS, 2 rear + 2 front 3.5" bays, 1x 5.25" bay, Hard Drive as below, Amiga DOA 3.0 system and utilities, Gold Service Warranty

| FULL 68040 | ALONE |
|---|---|
| 120MB HD 2 + 4MB | £2089 inc. VAT |
| 120MB HD 2 + 8MB | £2259 inc. VAT |
| 240MB HD 2 + 8MB | £2399 inc. VAT |

TRADE IN AVAILABLE

With Kaga M/Sync SVGA low radiation high-res 28 dot pitch col. monitor inc tilt and swivel, all 4000 modes ADD £400

## NO OTHER DEALER CAN BEAT OUR CREDENTIALS

- 8+ years experience in Commodore product and here to stay
- Commodore trained staff are friendly and helpful and are parents, multimedia, educational, games, programming or technical specialists (usually more than one!)
- Open 9-6 pm Monday to Saturday and 10.00 am to 4.30 pm Sundays for convenient shopping.
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- Free 30 day, next day courier collection and delivery of NEW replacement.(except product with on-site maintenance)
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- BFPO and Export welcome

## NOT JUST ANOTHER MAIL ORDER COMPANY

For years a major player in Amiga Mail Order, Hobbyte also boast extensive expertise and experience in specification and support of multi-machine and specialist systems. Hobbyte have been recommended and trained by Commodore and successfully won major orders and support contracts from London Boroughs, MOD, educational establishments etc. We are pleased to be placed on tender lists.
This expertise is available to all our customers.

## AMIGA 600

**1/2 PRICE "EPIC EXTRA" WITH ANY 600HD ADD £15

A600 with 12 month on-site warranty, 1MB, WB 2.05, 3.5" FD + Smart Card Interface Mouse and Manuals

| | ALONE |
|---|---|
| A600 | 249.00 |
| A600 20MB HD | 339.00** |
| A600 40MB HD | 399.00** |
| A600 80MB* | 469.00** |

2MB VERSION ADD £39.95
* Top quality 3rd party drives, covered by full 12 month return-to-base warranty

**NEW CBM 1084ST**
WITH TILT & SWIVEL STAND + LEADS
£179.99 WITH ANY COMPUTER

## AMIGA 1200

TRADE IN AVAILABLE

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|---|---|---|---|
| 1200 2MB SD | 369 | 1200 2MB 80MB HD | 595 |
| 1200 2MB 20MB HD | 499 | 1200 2MB 120MB HD | 735 |
| 1200 2MB 40MB HD | 549 | 1200 6MB 80MB HD +68881. | |
| 1200 2MB 60MB HD | 569 | | 875 |

Install disc and full 12 months return-to-base warranty on all HD models.
With Zool, Striker, Pinball Dreams and Transwrite ADD £19.99
OR SEE NEW AGA GG PACK BELOW

NEW MID RANGE AMIGA EXPECTED with new chip set, 68030 PHONE!

## THE HOT LIST

CURRENT TITLES VARY - INCLUDES:

| | |
|---|---|
| Paperboy II | Hunt for Red October |
| Colossus Chess | Blinky's Scary School (under 12) |
| Challenge Golf | Battleships |
| Neighbours | Licence to Kill- Bond Game |
| Frankenstein | Silkworm Helicopter jeep mission 93% CU |
| Edd the Duck (under12) | Continental Circus - 8 Int race circuits 92% AA |
| Master Blazer - 3D sports | Xenon - C+VG Game of the Month |
| Onslaught - Format G 90% | Thunderstrike - Fighter Flight Sim |

+ LOTS MORE - AT LEAST 25 TITLES TO CHOOSE FROM!

## AGA GG PACK

(GRAPHICS + GAMES)
FOR A1200, 4000 ETC.

| | VALUE/RRP |
|---|---|
| • Personal Paint AGA - Top reviews, impressive DP IV clone with additional features inc. image processing, paints in any screen mode | 69.99 |
| • Your choice of - Wing Commander AGA or Zool AGA or Sensible Soccer AGA | 34.99 |
| • 5 'Hot List' games (AGA compatible) individually boxed | 174.95 |
| • Microswitched Joystick | 9.99 |
| • Mouse Mat + Dust Cover | 9.98 |
| • 10 Blank Discs + 80 capacity lockable disc box | 16.98 |
| • Virus Killer | 4.99 |
| TOTAL VALUE | 321.87 |
| WITH AMIGA/CDTV | 89.99 |
| SEPARATELY | 109.99 |

## STARTER PACK

| | MAX VALUE/RRP |
|---|---|
| • Microswitched Joystick | 9.99 |
| • 80 cap. lockable disc box PLUS 10 blank discs | 16.98 |
| • 4 great boxed games - See HOT LIST Phone for current choice OR DPaint III +700 Clip Art Pics/graphics | 159.96 |
| • Mouse Mat and Dust Cover | 9.98 |
| • 16 Days Free Hotel Accomodation in UK, Ireland or France - you pay only for meals | |
| TOTAL VALUE | 196.91 |
| WITH AMIGA/CDTV | 19.99 |
| SEPARATELY | 29.99 |

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Full UK spec. with 1MB RAM, mouse, expansion as 2000, leads, manuals. New including Kickstart & Workbench 2.05. Hard disc configuration inc. the high performance GVP II controller card, EXPANDABLE TO 8MB.

| | |
|---|---|
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| DD+GVP+52MB HD | 732.00 |
| DD+GVP+80MB HD | 799.00 |
| DD+GVP+120MB HD | 872.00 |
| With 8833/1084S | ADD 179.99 |
| With 7CM + M/W FF | ADD 379.99 |
| Per extra 2MB fitted to GVP | ADD £60.00 |
| Also with Kickstart 1.3 + ROM Sharer | ADD £39.90 |
| Also with Citizen 200 24 pin Col Printer + Starter Pack | ADD £199.00 |

### 1500 SPECIALS

**1/2 PRICE 1500 S/W PACK EXTRA** Only with 1500, 1500 Pack Extra at only £24.99
**1500 HD + ON-SITE, 8833/1084S, CITIZEN 200** 24 pin col printer, 1500 Extra software pack, Starter Pack + AmigaVision
52MB £1149.00 120MB £1329.00

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ALSO WITH STARTER PACK £19.99 EXTRA

1MB, with Disc Caddy, Welcome CD + tutorial + remote control unit.

| | AS ABOVE | WITH MATCHING DRIVE KEYBOARD, MOUSE + WB 1.3 |
|---|---|---|
| As above | £349* | £435 |
| monitor + remote control | | |
| Extra RAM | £POA | |

* Plus Hutchinsons Encyclopaedia + Lemmings
See below/across for software packs

NEW PRICES!

## THE HOTTEST LOT PACK

| | VALUE/RRP |
|---|---|
| • All as Starter Pack | 203.90 |
| PLUS: | |
| • Another 10 GREAT individually packaged games, **BETTER THAN THE REST** previous RRPs up to 39.99 each, phone to choose from **HOT LIST**, or leave it to us! Children's games available. | 269.82 |
| • 80 Prog. Hobbyte PD Greats Pack II - Includes top games like Battlecars, Star Trek, Computer Conflict, Megaball, dozens of arcade classics, board classics and 'shoot-em-ups', DPaint clip art, Utilities, Word Processor, Spreadsheet, Database + Desktop Publisher and the ultimate virus killers - a must for every new Amiga owner! | 39.99 |
| TOTAL VALUE | 513.71 |
| WITH AMIGA | 49.99 |
| SEPARATELY | 69.99 |
| SPECIAL: ALSO 10 extra 'Hot List' games | ADD 25.00 |

## WWW EXTRA PACK

ALSO WITH STARTER PACK £19.99 EXTRA

| | VALUE/RRP |
|---|---|
| • WWW games: Silly Putty | 25.99 |
| Formula 1 Grand Prix | 25.99 |
| Pushover | 25.99 |
| • DPaint III with animation | 79.99 |
| • 700 clip art pics/graphics for DPaint III | 9.99 |
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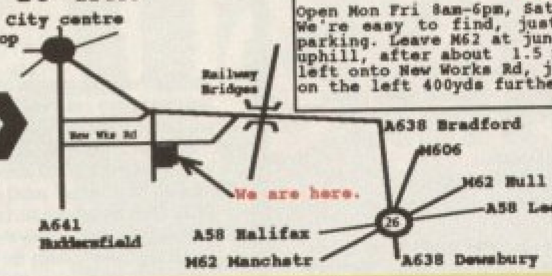
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The HD8 series II can accept either 1 or 2 or 4, 1 meg simms; OR two, 4 meg simms.

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*ASTOUNDING SPEC:*

68020 32BIT Cpu
14.19MHz CLOCK SPEED
2 MEG RAM
3.5" FLOPPY DRIVE
16MILLION COLOUR CAPABILITY
BUILT-IN TV MODULATOR
WORKBENCH 3, MOUSE & PSU
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*40MEG:**
*60MEG*
*80MEG*
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- > RGB & COMPOSITE INPUTS
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| **NETWORK CARDS:** NE2000 16bit (Novell Lite compatible) | £65 |
| **MONITORS:** 14" SVGA INTERLACED .28mm PITCH, 1024x768 from | £195 |
| **INPUT DEVICES;** BUDGET MOUSE £12.00. GENIUS GM6000 MOUSE | £20 |
| **CO-PROCESSORS;** IIT80387SX25 £75; IIT80387SX33 £89; IIT80387DX40 | £99 |
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Deal with us with confidence - over 9 years of 1st Class service means you won't see us on 'Watchdog' !

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SEE OPPOSITE PAGE FOR 'HOW TO ORDER'

# TRILOGIC

## NO AMIGA REPAIR BILLS FOR 2 or 3 YEARS

WHEN YOU TAKE OUT AN EXTENDED WARRANTY WITH US.
Underwritten by a leading Uk Insurance Co.

COVERS BREAKDOWNS & ACCIDENTAL DAMAGE.
ACCIDENTS can happen to anyone & they aren't covered by the manufacturers warranty. AND once this has expired, you can bet things will start to go wrong. With the average minimum Amiga repair costing £49.99 it DOES make sense for a one-off payment, to know you will never have ANY repair bills to pay for 2 or 3 YEARS. Full details on request.

COMPUTERS UPTO £600 IN VALUE - 2yrs £27.99 3yrs £42.99
COMPUTERS UPTO £999 IN VALUE - 2yrs £32.99 3yrs £67.99

### IMPORTANT ANNOUNCEMENT

THESE WARRANTIES WILL COVER YOUR AMIGA EVEN WHERE FITTING A HARD DRIVE INVALIDATES COMMODORE'S WARRANTY.
* Covers you even if drive DIY fitted.
* Covers you even if computer not purchased from us.
* Covers both computer & drive FOR 2 OR 3 YEARS
* Covers accidents & breakdowns.

(Use prices above - including total cost of computer & drive.)

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- > TV MODULATOR
- > WORKBENCH 2.04

PLUS
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| | |
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*(Requires gary chip removal & invalidates warranty)*

| | |
|---|---|
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| | |
|---|---|
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*Just plugs in. No soldering.Warranty unaffected.*

| | |
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**AMIGA 1200 FAST RAM CARDS**

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| MICROBOTICS 14MHz inc 0 meg 32bit fast ram | £129.99 |
| MICROBOTICS 14MHz inc 1 meg 32bit fast ram | £199.99 |
| MICROBOTICS 14MHz inc 2 meg 32bit fast ram | £255.99 |
| MICROBOTICS 14MHz inc 4 meg 32bit fast ram | £359.99 |

*These include 68881 co-processor on board & fit in the underside trapdoor. Warranty is unaffected. Add £50 for 25MHz version with 68882 co-processor.*

**AMIGA 1500 & 2000 MEMORY CARDS**

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| DKB MEGACHIP BOARD FOR A1500/2000 inc 2meg | £184.99 |
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For popular Citizen & Star printers - please state printer when ordering.

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MONITOR LEADS MADE TO ORDER - please supply full details.
ALL ABOVE LEADS MADE TO ANY LENGTH - ADD £1.50 PER METRE.
(Standard length approx 1.5m)

# Faults hit TV Amigas



*Lewis: Five per cent of A1200s have TV fault*

**by John Butters**

AT LEAST 2,500 A1200s have been sold in Britain with a fault that shows up only when the computers are connected to television sets.

Commodore's Amiga product manager Gary Lewis confirmed there had been problems and thought the fault might lie in the machine's sound chip.

Technical experts consider this unlikely, however, because the machine works correctly when used with computer monitors. They point the finger at the internal RF modulator.

Lewis claimed that the problem affected only five per cent of the first 43,000 machines built at Irvine, Scotland and added that Amigas now in production do not have the defect.

But *Amiga Computing* readers from all over the country have called our office reporting the fault. In many cases their Amigas worked perfectly for some time before failing.

One user said that for six weeks his machine had been used heavily for his business and then stopped working through the television. Another said: "First the colours went, although you could still see the image, and then even the image disappeared. It was distorted and flickering."

Commodore-approved repair firm Wang, meanwhile, had difficulty keeping up with the flood of complaints after Christmas.

At one stage there was a 16-day delay before an engineer could attend to reported faults, but Wang told us that normally the wait is less than four days.

Anybody with a faulty A1200 should telephone Wang's repair hotline on 081-847 2223 or 081-231 3700.

## A4000 in a tower

COMMODORE plan to launch a tower version of the A4000 and a digital signal processor upgrade, developers learned at a recent meeting behind closed doors in Orlando, Florida.

Unlike the tower model of the A3000, this new machine will have slightly higher specifications than the standard A4000, including a SCSI-II card and two video slots.

According to well placed sources, the manufacturer also plan to release a digital signal processor (DSP) this summer.

Developed by American giant AT&T, the chip will work perfectly alongside the Amiga architecture and Commodore US said it will be offered to existing A4000 owners as an upgrade.

Other plans from the firm include an MPEG board which will compress and play back animations to enable them to be packed onto CD-ROM.

And an insider claims that despite Commodore denials an AGA-based version of CDTV with a 68020 processor will be added to the Amiga range.

It will probably be launched only when stocks of the existing model have been sold, and will include the latest version of the Workbench operating system.

An official at Commodore's Maidenhead office said he could not comment on the products.



*A4000: Tower system this summer*

## Protection for Future World

DEALER Future World Computers has sought court protection against creditors and their administrators say dissatisfied customers must register loss claims as soon as possible.

Pannell Kerr Forster have also warned prospective customers to ignore advertisements for the firm's mail order service which appeared in February's computer press.

"Credit card transactions for over £100 should be covered by insurance," said Pannell Kerr Forster's Bob Hamblin.

"People who bought through mail order in response to advertisements in the computer press may be covered by the Mail Order Protection Scheme, or by the scheme run by the Periodicals Publishers' Association.

"Anyone who sent a cheque or postal order to the company – or who fails to have their claim resolved by the methods mentioned – should write to us outlining their complaint in full."

Bedford-based Future World Computers, who also traded as Dynamite Computers, operated six shops and a mail order service and were placed in administration at the request of the directors.

As we went to press the firm were trading though three of their original six shops and the business was advertised for sale as a going concern in the computer trade press.

Pernnell Kerr Forster are at 159 Charles Street, Leicester LE1 1LD.

## £250,000 Amiga donation




***Commodore will make a £10 donation to Comic Relief charities for every one of their 25,000 A1200 packs sold. Each costs £399.99 and includes Ocean Software's Sleepwalker game***

## 24-bit colour from £345

RETINA is the name of a new low-cost Amiga 24-bit graphics card now available for top-end machines from Amiga Centre Scotland (0896 87583). In addition to giving 24-bit output, the card can also offer resolutions up to 2,000 x 1,600 pixels using a smaller colour palette and will be supplied with paint package VD Paint.

Developed by the makers of V-Lab, Macro System, the card will be available with either 1, 2 or 4Mb of memory and prices will range from £345 to £499.

Meanwhile, ACS boss Martin Lowe has also told *Amiga Computing* about improvements due soon for 24-bit paint program TV Paint. He said the software will offer a range of new features including chalk and crayon effects, multiple windows open at the same time and zoom windows scaled to size.

Upgrades will be available to existing users but at the time we went to press prices remained to be fixed.

➤

# Features and speed from GVP

AMERICAN peripheral giant Great Valley Products (010 1 215 337 8770) have been busy this month releasing an A1200 accelerator and updating two of their software packages.

A1230 Turbo is a 40MHz accelerator for the entry-level AGA computer which is installed into the expansion bay at the bottom of the machine.

Two Simm sockets allow for expansion of up to 32Mb of DRAM. A floating point can also be added to increase the speed on maths-intensive applications.



*A1230: 68030 accelerator for the A1200*

"The A1230 Turbo is an affordable way to add 030 acceleration to the A1200," said GVP's product manager Gary Nush.

He added that the board made the A1200 a viable computer for even the most serious applications. UK price is £399.

Meanwhile, additional features found in morphing program CineMorph include an infinite zoom, regional dissolve, point naming and point locking.

New gadgets have also been added to the curve editor window to give it greater flexibility and the Render menu gains AGA support.

And ImageFX, the company's visual effects software, has been given AGA preview and render modes, extra keyboard short-cuts and an updated file requester.

Updates are available from earlier versions of the software at no charge. The UK distributor for GVP is Silica Systems (081-309 1111).

## Micro Science experiment

EDUCATION software specialists LCL (0491 579345) will soon release Micro Science, a national curriculum-based integrated science course for Amiga users.

Aimed at children aged between eight and GCSE level, the program can also be used as an aid for physics, chemistry and biology exam revision.

The £24.99 package contains practical experiments, a graphics adventure game and biology demonstrations with moving 3D pictures of body parts.

Said an LCL spokesperson: "Micro Science combines the creativity and fun of the national curriculum with the academic intensity of GCSE.

"The fun and serious type of programs are alternated to motivate the student to keep moving through the course."



*Micro Science: Teaches science up to GCSE level*

## A4000 expansion

A SCSI-II DMA controller for A4000s which will feature up to 64Mb of 32-bit memory expansion is due for imminent release from German developer Phase 5 Digital Products.

The developers claim it will offer 7Mb per second asynchronous transfer and 10Mb/s synchronous transfer on the SCSI bus.

Supplied with cacheing utility DynamiCache, it will cost £399.99. The firm can be telephoned on 010 49 69 5481844.

## Three-year Amiga warranty

A SPECIAL warranty is aimed at A600 and A1200 owners who have voided their computer's original guarantee by fitting an internal hard disk drive.

Operated by Trilogic (0274 691115), the scheme enables Amigas and hard drives less than 12 months old to be insured against failure for up to three years.

Neither the computer nor the drive need have been bought from the company, although Trilogic require proof of purchase and a description and serial numbers of each item to be covered.

"We recommend the warranty even for owners who do not intend to fit a drive," said a spokesman for the firm.

"They are a worthwhile investment when you consider the cost of one repair could easily exceed the cost of even the two-year warranty."

For setups valued at up to £600 two-year cover costs £27.99 and three years is £42.99. Warranties for Amigas worth between £601 and £1,000 cost £42.99 and £67.99 respectively.

## Doing it with disks...

SIREN Software's (061-724 7572) four-program disk utility package X-Copy Pro has been improved and is now A1200-compatible.

X-Copy Pro is a multi-purpose disk utility used for formatting disks, checking for errors and viruses, optimising disks to allow them to load quicker and for copying disks.

The other programs are Cyclone, Xlent and Xpress. Their uses include disk copying and hard disk back-up. Version 9.92 costs £39.99. Telephone Siren Software for upgrade details.

## More for colour

AIMING to make colour printing "within the reach of many more", Seikosha have launched what they claim to be the first sub-£250 24-pin colour printer.

The SL-95 prints at speeds up to 240 characters per second in super draft mode, offers Epson emulation and has a standard parallel interface.

A 43k buffer is supplied as standard and it contains nine fonts. An automatic cut sheet feeder is available for an extra £82.

"Seikosha aim to capture a large share of the buoyant entry-level colour market," said the firm's sales manager Gareth Cornish.

"We do see competition but in terms of price/performance, the SL-95 has significant advantages."



*SL-95: Colour within reach of many more*

## Studio quality

STUDIO is a new printing utility aimed at Amiga owners who need to produce continuous tone pictures from LaserJet, DeskJet or 24/48-pin dot matrix printers.

Its features include the ability to print massive graphics files directly from disk and support for high printer resolutions.

The program is also claimed to correct ink impurities with an ink compensation feature and offer multiple dithering methods.

Poster-sized output is available and it controls gamma correction, brightness and contrast.

Requiring any Amiga with Workbench 2 or higher, this German software will be sold in Britain through Micro-PACE (0753 551888) for £49.99.

## Price rise

FROM May's issue the quarterly direct debit charge for *Amiga Computing* subscribers will rise to £7.99. This is due to an increase in production costs.

## GVP drive a hard deal

PERIPHERAL developer Great Valley Products have cut the price of their best selling 42Mb HD8+ hard disk drive from £349 to £299. Claimed to be the fastest A500 hard drive, the HD8+ features GVP custom interface technology and a high speed SCSI mechanism for maximum data transfer speeds.

In addition it includes internal memory expansion up to 8Mb, SCSI expansion for up to seven units and its casing is designed to blend in with the Amiga system.

According to a spokesman for UK distributor Silica Systems: "GVP is the undisputed leader of Amiga hard drives and now with the new low price, they will become unchallenged in the market."

Silica Systems can be telephoned on 081-309 1111.

## Help for A1200 beginners

NEWCOMERS to the A1200 are targeted for the latest publication from Bruce Smith Books (0923 894355), *A1200 Insider Guide*.

Billed as a practical tutorial, it touches on aspects of Workbench 3, utilities, preferences and AmigaDOS.

Its 256 pages contain explanations on how to get to grips with the Amiga and 55 guides displaying graphical step-by-step instructions.

"In 24 chapters, the *Insider Guide to the A1200* brings the reader steadily closer to mastery over the potential of their computer," claimed Bruce Smith.

"It covers everything from setting up, using disks and running programs to using the Shell, AmigaDOS scripts, adding icons, tools, viruses and printer graphics."

Cost: £14.95.

## Citizen drive Amiga colour

AN IMPROVED version of Citizen Europe's Amiga printer driver has been released to support the firm's Swift 2 range of 24-pin dot matrix machines.

Additional features allow improved printer control which is claimed results in higher quality output, faster speeds and easier set up and use.

It is fully iconised and enables user definable set-ups to be saved to disk and loaded into a printer at any time.

"The Amiga driver continues to show that colour printing quality on dot matrix printers is comparable to colour inkjet products, and at a much lower price," said Citizen's Andy Martin.

Priced at £14.10, it is available from authorised Citizen dealers or by telephoning 0573 584111.



*HD8+: Price drop to £299*

## Shown the spreadsheet way

ONE of the least understood computer applications is explained in *Spreadsheets Made Simple*, a new book just published by Kuma Computers (0734 844335).

It is aimed as a companion for any Amiga program that offers even limited compatibility with the industry-standard Lotus 1-2-3.

Using a set of step-by-step exercises, it takes readers from a simple worksheet containing only a single calculation to a complete financial model.

Features covered include macros, data entry screens, summary reports and Monte Carlo Analysis, and practical applications such as cashflow forecasts and budgets.

Targeted at managers, businessmen and business studies students, the guide costs £12.95.

## Modulator replacements

OWNERS of A500s who cannot find replacements for faulty television modulators can now have their problem cured by Bradford-based Trilogic (0274 681115).

Users should send their broken modulator plus £20.99 to the firm, who will then exchange or repair the unit and give it a six-month guarantee.

The company also claims that many modulators are damaged by falling out of the Amiga's video connector and that an extension lead will prevent this from happening. Price: £11.99.

## Cheaper speed from Canada

IN RESPONSE to recent changes with Commodore's range of Amigas, Hydra Systems (0203 471111) have cut the price of Canada-based RCS' Fusion 40 accelerator.

The 28MHz board fitted with 4Mb of memory now sells for £999, and a new 33MHz version is available at the old 28MHz price of £1,175.

And because several hard disk controllers are unhappy working at high speed, RCS are also supplying a free SCSI hard disk controller with the board.

"At this level, claims that the A3000 is better value for money are unsound, as the F40 outruns it by 500 per cent," said Hydra boss Graham Heggie.

"If you need this level of grunt nothing else will do. With an 040 you can do a week's rendering in a day."

## Now Power add memory

A RANGE of new memory expansions and a colour scanner for the A1200 are on the way from Bedford developer Power Computing (0234 843388).

For A500 and A2000 machines, the firm have manufactured a new version of their 2, 4 and 8Mb RAM upgrades.

According to company boss Tony Ianiri their new design is intended to improve the board's reliability and their prices will remain as £109, £169 and £289 respectively.

Following close behind will be an A1200 upgrade giving either 2 or 4Mb, with a slot for an optional maths co-processor, it will come with a clock.

And the company's colour hand scanner with resolutions between 100 and 400 dots per inch is also due to appear soon for A1200 owners. A1200 product prices were unavailable.

## Network returns

AMIGANET, an Ethernet alternative to Commodore's A2065, is now available again after a prolonged production shutdown caused through software licensing problems.

The board has an Ethernet transceiver for optional cheapernet (thinwire) operation, up to 64Mb of tri-port RAM buffering and an optional 24-bit address range DMA.

It is available for many machines in the Amiga range including the A500 and comes with Peer-to-Peer software. It costs around £295 from Hydra Systems (0203 471111).

## Extra laser at Epson

EPSON have extended their range of personal laser printers with the launch of a six page per minute, 300 dots per inch model, the EPL-5200.

With a £929 price tag, Epson claim their new machine sets a new benchmark in affordable, entry-level laser printers.

Features include fast first page for users needing to print small documents frequently throughout the day, and a printer sharing facility to enable three computers to be connected.

Its default language emulation is PCL5 but it also has standard Epson LQ and FX emulations. PostScript and HPGL are provided through optional cards.

With 1Mb of memory – expandable to 5Mb – it has a footprint of 14in x 18in and weighs 10kg.

Epson's Mark Vagg commented: "We have been able to provide a wider combination of features than any other manufacturer at a very competitive price."


*EPL-5200: Six page per minute laser from Epson*

# News briefs

● OWNERS of Power Computing's (0234 843388) PC880B external floppy disk drive can now have their equipment made A1200-compatible.

Adjustments to the drive have been needed because Commodore made changes to the external drive port's power output on their new computer (see news last month).

Any PC880B's requiring the fix should be sent with a cheque for £15 to Power Computing, Unit 8 Railton Road, Woburn Road Industrial Estate, Kempston, Bedford MK42 7PN.

● FOLLOWING the departure of Helmut Joust from the managing director's seat at Commodore Germany, Alwin Stumpf has now taken over as head of the firm.

Stumpf quit from rival company Atari before Christmas over a dispute concerning European cut-backs and the positioning of the manufacturer's new Falcon computer.

● STUDIO 101 (0827 280884), the firm which prints Amiga-generated artwork onto white T-shirts, say they can now also supply black shirts.

Prices for adult sizes are £15.99 and for children £10.99. White costs £10.99 and £7.99.

● COMMS giant CompuServe have moved their Bristol office to PO Box 676, Bristol BS99 1YN. The new telephone number is 0272 760700.

● AN OFFER at Calculus Stores (0543 251275) enables buyers of 24-bit graphics board OpalVision to pick up a free copy of Imagine 2, Impulse's 3D rendering software. Cost: £699.99.

● THE *Which Computer?* Show, one of Britain's leading business computing events, has been scrapped this year because of insufficient exhibitor participation.

Reed Exhibition's 12-year-old show was due to be held at Birmingham's NEC on April 20 to 23. Last year it was attended by 53,000 visitors.

● A1200 owners will soon be able to plug up to 8Mb of fast RAM into their computer's trap door using a new memory board from Phase 5 Digital Products.

Blizzard 1200/4 is supplied with 4Mb of memory and includes a socket for a maths co-processor and an on-board connector for an extra 4Mb of RAM.

Its price will be £249 and the 4Mb expansion will cost £199. Germany-based Phase 5 can be telephoned on 010 49 69 5481844.

## A500 repair centre opens

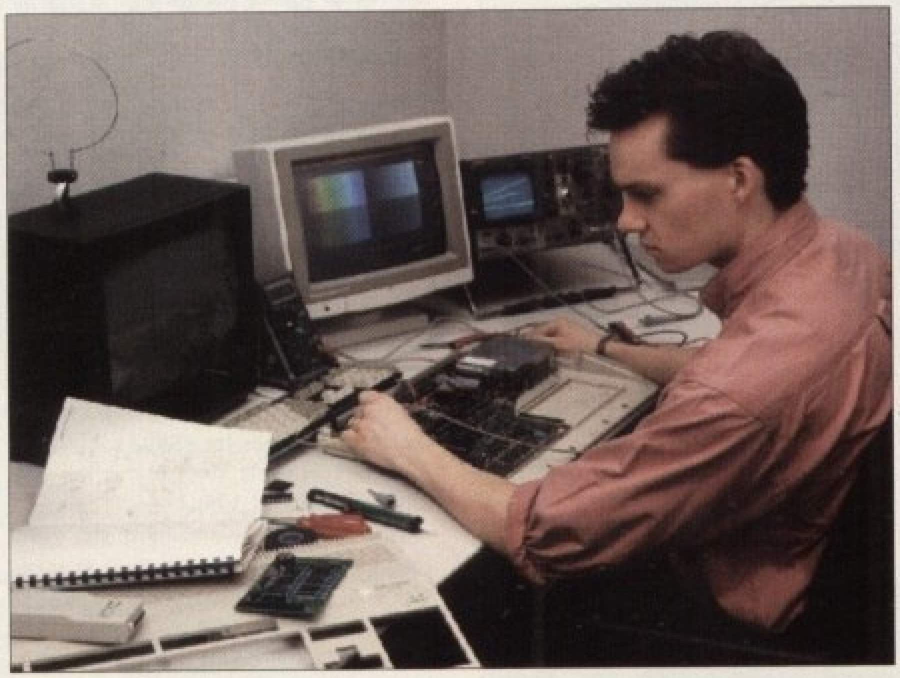
SIDCUP-based dealer Silica Systems (081-309 1111) have extended their support to Amiga owners by opening a servicing a repair centre for A500s.

Amigas sent to the firm undergo a diagnostic check to find the source of the problem, and if the machine requires anything more than a standard repair then an engineer calls the customer.

A 30-day warranty is given to every computer fixed, and for an extra charge this can be extended to one year. Machines are returned by an overnight courier.

Said spokesman Andy Leaning: "We've been able to offer Atari and PC customers servicing and upgrade facilities for some time.

"Now our engineers are experienced enough with Amigas and we've built up adequate components stocks, so we should be able to repair most A500s within two days."



*Repair: Silica open A500 service centre*

## Clocking in...

ONLY weeks after the launch of MBX1200, the upgrade to give A1200 owners up to 8Mb of fast RAM and a floating point users, a new version of the board has been released.

MBX1200z includes an onboard battery-backed clock and is compatible with the AmigaDOS Date and SetClock commands.

Developers of the product, Microbotics, have also announced the availability of a clock for existing MBX owners. Priced at £29.99, it installs inside the Amiga.

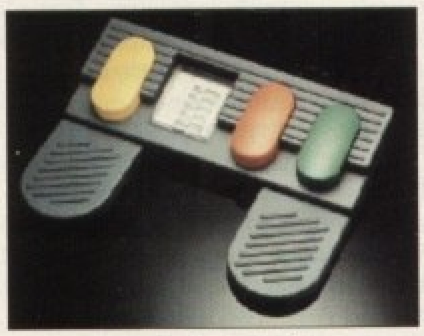
Both products can be bought from the firm's British dealers which include Calculus Stores (0543 251275).

## Putting your foot down

DESIGNED to be used alongside computer joysticks, Spectravideo's Foot Pedal is aimed at players of multi-functional games such as flight and driving simulators.

The manufacturer claims the realism in driving games can be increased by using the pedal for acceleration and braking.

It offers a function control pad, industry-standard micro switches and a durable body design and costs £24.99. Spectravideo can be telephoned on 081-902 2211.



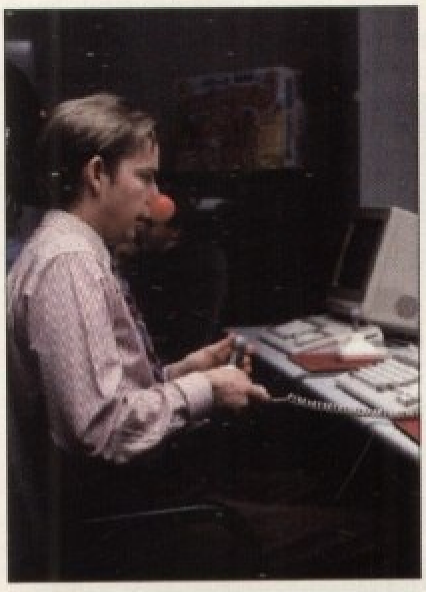
*Foot Pedal: Aimed at simulator players*

## Title slips through Butters' fingers

FOR all his news gathering experience *Amiga Computing*'s John Butters remained flummoxed by the joystick in Commodore's Super Hooter challenge.

But the northern news-hound – "Scoop" to his friends – chalked up a respectable 500 on Ocean's Sleepwalker to finish fourth. The winning score was 700.

The contest was set up as Commodore celebrated the launch of its A1200 Comic Relief pack recently.



*Butters: Not the world's best games player*

## Memory added to Ricoh

A NEW version of Ricoh's LP1200 laser printer boasting extra memory is now available from dealer Silica Systems (081-309 1111).

Fitted with 4Mb of RAM, the printer sells for £938.82 and continues to cost £821.32 when bought with 2Mb of RAM. Other features include 400 dots per inch resolution and six page per minute printing.

Said Silica's Andy Leaning: "Last year the LP1200 won all of the printer comparison awards in the Amiga press. We're now building on this, fitting 4Mb as a new option.

"We are very confident that in its price range there is nothing that competes with the LP1200."




*Ricoh: Now with more memory*

## DIARY DATES

**25 to 28 March 1993**
*Ideal Electronic Games Show*
*Organiser: Ideal Home Exhibtion*
*(061-432 2642)*
*Venue: Earls Court, London*
A new section added to the Ideal Home Exhibition.

**4 to 6 April 1993**
*European Computer Trade Show*
*Organiser: Blenheim*
*(081-742 2828)*
*Venue: Business Design Centre, London*
New software and hardware is previewed to the industry. No public admission.

**23 to 25 April 1993**
*Midi Music Show*
*Organiser: Westminster Exhibitions*
*(081-549 3444)*
*Venue: Wembley Exhibition Centre*
Catch up with the latest Midi products.

**16 to 20 September 1993**
*Live '93*
*Organiser: News International*
*(071-782 6000)*
*Venue: Olympia, London*
A public consumer electronics show. Commodore plan to attend.

### OVERSEAS

**24 to 31 March 1993**
*CeBit*
*Organiser: Deutsche Messe*
*(010 49 511890)*
*Venue: Hanover, Germany*
A massive electronics show which has been used for the launch of many new products including the A600.

● *If your company is organising a show relevant to the Amiga and it's not listed, let us know so we can include the information in the diary.*

## DO YOU KNOW SOMETHING WE DON'T?

**Although *Amiga Computing* has scores of contacts in the Amiga world we need you. If you have some hot news ring John Butters on the news desk now on 0625 878888 or fax to 0625 879966. All information supplied will be treated in the strictest of confidence.**

# Whats New USA

## Denny Atkin reports from Florida on the latest developments over there

## The Disney DevCon

The first worldwide Amiga Developer's Conference was held from January 26 to 30 in Orlando, Florida, home of DisneyWorld and Epcot Center.

The 400-plus developers in attendance – from Australia, Austria, Belgium, Germany, Israel, Italy, Japan, The Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom and the USA – managed to keep their minds off the local attractions (thanks in part to some very nasty, rainy, un-Florida-like weather during the first few days of the conference) long enough to drink in the latest developments from Commodore's hardware and software teams.

DevCon is not usually an event you can report much news from. Developers and journalists are required to sign a non-disclosure agreement that ensures you won't report on the company's secrets.

However, ever since Lew Eggebrecht has taken over Commodore's engineering department, there's been a new openness about the company's future hardware directions, and there's plenty of hot news that's legal to talk about.

We'll start with some new hardware products that Eggebrecht mentioned would be shipping this year. Note that none of these products were complete when DevCon took place, so any estimated shipping dates should be taken with a grain of salt.

First, there's the previously announced A4091 SCSI-II card for Amiga 4000 users tired of the machine's poky, processor-hogging, hard-drive-only IDE interface.

The A4091 is a 32-bit Zorro III card that supports the Wide SCSI standard and has full bus-mastering capabilities. The card should be available by the time you read this. There's one caveat, though – you'll need an updated Buster chip to use this, or just about any other, Zorro III hard drive controller.

However, the Buster chips are surface-mounted on all but the most recent A4000s, meaning that someone's going to have to do surgery on your A4000 before this card will work.

If you've believed all the rumours about a mid-range A2400 coming out to replace the A1500/A2000 series, it's time to see the light.

Commodore's true replacement will be a lower-priced Amiga 4000 equipped with a 68EC030 board instead of the 68040 found in current A4000s, which should be available soon.

The EC030 is a version of the 68030 that doesn't have an MMU (Memory Management Unit), which is only a concern if you want to run developer tools or use a virtual memory product like Gigamem.

The current plan is to ship this unit with 4Mb of RAM (2Mb Chip, 2Mb Fast) and a 120Mb IDE disk drive. You should be able to replace the EC030 card with Commodore's A3640 68040 card should you feel the need for speed.

Eggebrecht also mentioned that the A4000T (T doesn't stand for Tower, but for "Floor-Standing Unit", thanks to another company claiming ownership of the word tower) would be available during the second quarter of 1993. Details are still top-secret, but the unit is more than an A4000 sitting on its side.

### Headache

An unexpected and very impressive addition to the high-end product line is the AGA Display Enhancer, due out in the latter half of 1993. If you've got an AGA machine, you know what kind of headache it can be sometimes to get mode-promotion to work with some applications.

The AGA Display Enhancer deinterlaces screens in hardware, and will work with all the AGA graphics modes. This means you no longer have to have a monitor that will sync down to 15kHz to play your old games.

It also means that all graphics modes will be shown at rock-solid, scan-line-less high frequencies, even 800 x 600 mode. Eggebrecht said that some new modes would be available at slow refresh rates, including a mode with greater-than 1,024 x 1,024 resolution, if your monitor will support them.

Also, the Display Enhancer has a built-in 24-bit frame buffer, which will give you true 24-bit capability! A lot of power in one card, and it's likely to be priced for the power user. The card plugs into the Zorro III and Video slots and is designed for the A4000 series, although Commodore indicated it will work on the A3000 series as well, with reduced functionality.

Finally, Eggebrecht indicated that Commodore remains committed to bringing CD-ROM capability to all Amiga systems, and that we'll eventually see CD-ROM drives for all current Amiga systems.

Of course, what's a DevCon without dreams? Developers saw a lot of future developments that aren't likely to hit the market this year, but were plenty to keep them excited about the future of the Amiga.

Eggebrecht said that among the future technologies being considered by Commodore for the Amiga line are full-motion video support (the company publicly demonstrated a very impressive MPEG card with crisp, full-motion video, at the Winter CES show), hardware support for ultra-fast 3D rendering, and Risc processors.

Of course, developers are a demanding bunch, and many asked if other technologies were on the way. Eggebrecht's down-to-earth response was: "We do the things that Commodore can do best, and we let the developer community do the things that they do best."

Commodore understands that third-parties are responsible for much of the advancement in the Amiga market, and DevCon provided many sessions to help those developers keep up with the latest Commodore developments so they could run with them.

## DSP is coming!

An alternative to the EC030 card would be Commodore's 68040 card that's also equipped with a DSP (Digital Signal Processor). Eggebrecht said that this card would include a module with audio input/output ports, and that a module with a phone connector, for modem use, would be available as well.

While the details given out on Commodore's DSP during the conference are still classified, I can say that this is a much more sophisticated setup than that in the Atari Falcon, and should answer the wildest dreams of Amiga audio nuts.

This card is slated for release at the end of the first half of 1993, and should work in the A4000/040, A4000/EC030, and A3000T.

## Scape escape

Virtual Reality Labs have started shipping VistaPro 3.0, an enhanced version of the popular landscape generator that includes full support of the AGA chipset, so you can render landscapes in 256-colour and Ham8 modes. Even if you don't have an AGA Amiga, though, this upgrade is worth checking out.

A new cloud control panel lets you create clouds using random fractal mapping or by converting a landscape to clouds. You get complete control of cloud density, hardness, and size.

Tree support has been greatly enhanced, with both 2D and 3D trees, including pines, oaks, palms and cacti.

You get full control of the size and detail of the trees. For instance, you can make the pines nearest to the camera more detailed than the ones at the top of the mountain in the distance. You can even place trees and grass manually on the screen.

The new Altitude texture increases realism dramatically, so you'll never see a hint of a polygon. If you're looking for the ultimate in realism, VistaPro 3.0 supports creating stereo images which can be displayed using Sega or Toshiba 3D glasses driven by the serial port. All these new features are easy to learn thanks to the revamped, 3D-look user interface.

There's a lot more than I can fit in this column, but suffice to say that this program is well worth the $35 upgrade price. Retail price is still $99.95.



*Clouds, AGA support, and more in VistaPro 3.0*

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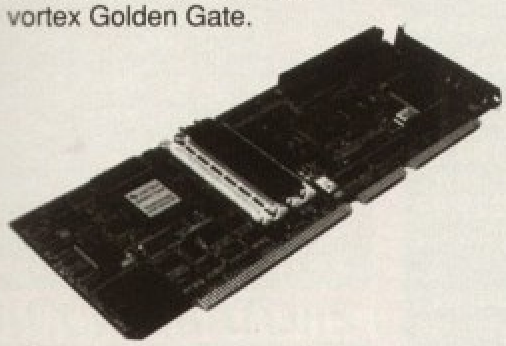
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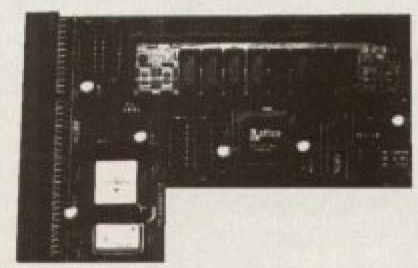
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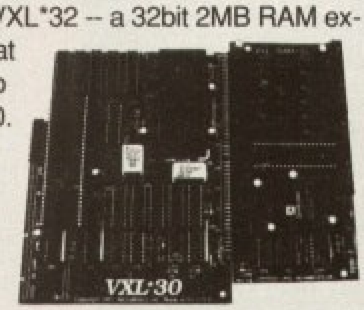
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only £364.99 (Inc On Site Maintenance)

**The A600 Wild, Weird & Wicked**
inc Micro Prose Grand Prix, Deluxe Paint 3, Putty & Pushover
only £299.99

**A600 DELUXE ..............ONLY £339.99**
**A600HD DELUXE........ONLY £509.99**
inc. ROM sharer with 1.3 & 2.05 ROM's making incompatibility a thing of the past. The A600 HD Deluxe comes with a Built in 20 Mb hard drive
Just add 37.99 for a 2 Mb 600 Deluxe!!

## THE AMAZING ZOOL PACK!!

Complete with the best selling:
- ZOOL (97% Amiga Computing, Nov 92)
- STRIKER (94% CU Amiga, June 92),
- PINBALL DREAMS (94% AUI, Sept 92)
- TRANSWRITE word processor

only £19.99 with any AMIGA!!

## A600 & 1200's with built in Hard Drive plus HD kits for 600/1200's

*Add £14.99 for Real Time Clock!*

NEW LOW PRICES!!

| | HD KIT | A600 | A1200 |
|---|---|---|---|
| 20Mb | £119.99 | N/A | £534.99 |
| 60Mb | £174.99 | £479.99 | £579.99 |
| 80Mb | £212.99 | £526.99 | £626.99 |
| 120Mb | £327.99 | £642.99 | £742.99 |

Complete with 12 month back to base warranty

## AMIGA 3000 RANGE

25 Mhz with 52 Mb HD, 2Mb RAM...£1299.99
25Mhz with 105 Mb HD....................£1549.99
All 3000's come with Amiga Vision Hard drive & Workbench 3. 12 month on site warranty

## AMIGA 4000

With the power of the 32 bit processor running at 25 Mhz (upgradeable), the new double AA graphics chip set & 16.8million colours. High density 1.44 Mb floppy, 120 Mb IDE
only £2099.99

*AMIGA 1500+ only £415.99*
With 2.04 Kickstart chip and Workbench 2.04!!
*AMIGA 1500+ SW Pack only £445.99*
inc D Paint 3, Plat Works, Home Accounts, 3 games, Amiga Format Tips book & Joystick.
*AMIGA 1500 Deluxe..only £479.99*
With the Prima ROM sharer, 1.3&2.04 Kickstart chip

NEW!!

**PRIMA REAL TIME CLOCK MODULE FOR A1200 ONLY £14.99!!**

All Amiga's come with Workbench, mouse & 12 month warranty. The standard A600's, A1200, A3000 & A4000 come with 12 months on site warranty All 1200/600's also come with a built in integral hard disk option.

## CDTV MULTI MEDIA PACK AND A570 CD ROM

Complete with CDTV, Keyboard, Mouse, disc drive Fred Fish & Workbench 1.3..only £469.99
CD Rom Amiga A570..only £329.99
Turns your Amiga 500 into a CDTV
65 Mb Hard Drive for the CDTV...£339.99
CDTV keyboard.......................................only £49.99
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## PRINTERS

All our printers are UK spec.

Canon · CITIZEN · Panasonic · HEWLETT PACKARD · Star

All our printers come with ink cartridges or toner & printer drivers (if available), paper & all cables!!

**Star LC20.................£137.99**
180 cps draft, 45 cps NLQ, quiet mode and multi fonts, push button operation.

**Star LC200 colour..£195.99**
9 pin colour, 8 fonts, 225 cps draft, 45 cps NLQ, A4 landscape printing.

**Star LC24-20........£199.99**
24 pin quality, 210 cps draft, 60 cps LQ, 16K buffer expandible to 48K, 10 fonts and LCD front display.

**Star LC24-200 mono...£219.99**
24 pin, 222 cps draft, 67 cps LQ, 10 fonts, A4 landscape.7k buffer expandable to 39K

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Colour version with 30K buffer expandable to 62K

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Professional quality with On-site maintenance, very quiet.

**Star SJ48 Bubble jet.....£209.99**
Laser quality, ultra quiet, Epson compatible & portable

**Star SJ48 Autosheet feeder..........£49.99**

**Star Laserjet 4 MK3..........£739.99**
4 page laser, 1 years on site maintenance

### Panasonic Printers

**Panasonic KX-P2180.....£189.99**
ultra quiet 9 pin colour, 192 cps draft, 38 cps NLQ

**Panasonic KX-P 2123..£229.99**
ultra quiet 24 pin colour, 192 cps draft, 64 cps LQ, 32 cps SLQ

### Citizen Printers

Citizen printers have a 2 year guarantee

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Excellent value 9 pin colour. Highly recommended

***NEW!!* Swift 240 Colour.....£269.99**
24 pin, 240cps draft, 10 fonts, quiet mode, 240cps.

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Same out put as the 240 but with less facilities

**Automatic Sheet feeder....£79.99**

**Canon BJ10ex.........£219.99**
Laser quality output. Larger buffer than the StarSJ48Canon/Star bubblejet cartridges..............£17.99

***NEW!!* Canon BJ200......£347.99**
3 page a min speed, 360 dpi, small footprint & 80 page sheetfeeder

**Canon BJ300..........£379.99**
Desktop bubble jet with laser quality

**Canon BJ330..........£519.99**
Wide carriage version of the BJ300

**BJ10ex Autosheetfeeder...£52.99**

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***NEW!!* HP Deskjet Portable only £369.99**

**HP500 mono.....now £329.99**
**HP 500 Colour...now £419.99**
**HP 550 Colour...now £539.99**
4 times faster than the HP500C!!
HP500 mono cartridges...............£14.99
Double life 500 cartridges...............£24.99
All HP printers come with a 3 year warranty

### *New!!* FUJITSU PRINTERS

12 month onsite included exept DL-1150 (12 month B T Base)
Fujitsu DL-1150 Colour.............£274.99
24 pin, 10 fonts, 200 CPS
Fujitsu Breeze 100..........................£219.99
ink jet, draft & LQ mode, BJ10EX beater
Fujitsu Breeze 200 ink jet..........£309.99
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## FIRST EXTRAS PACK

All the essentials required for the first time buyer & at a bargain price!! Comprises:
- Top quality microswitched Powerplay Cruiser joystick
- Mouse Mat
- Dust Cover
- 10 high quality Blank Disks
- Plus 3 games!!

only £29.99

## MONITORS

All our monitors are UK spec. All monitors come complete with a free Amiga lead

WARNING: Before you purchase a monitor make sure it has a full UK specification. You might be buying what you think is a similar monitor at a lower price but it is likely to be a "GREY" import. These monitors do not comply with British safety standards and are not covered by an official warranty

**PHILIPS CM8833 MK2 stereo colour monitor**
Colour stereo monitor. 600*285 line resolution, green screen facility, one years on site maintenance.
now with Lotus Turbo Esprit!!
only £224.99 UK Spec.
PHILIPS TV Tuner for the 8833..£64.99

**Commodore 1084ST Stereo Colour monitor**
features but in tilt & swivel stand this new moitor from Commodore is outstanding value
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**PRIMA SVGA Colour monitor with overscan facility**
The PRIMA monitor has a high quality Super VGA resolution. Includes overscan facility, .28 dot pitch.and tilt/swivel stand.
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with Flicker Free Video card
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superior to a standard TV set with full remote control and FAST TEXT
£269.99 or £219.99
without Fast Text

**COMMODORE 1960 multisync**
only £409.99

SPECIAL OFFERS ON ACCESSORIES with monitors
TILT & SWIVEL STANDS...............................£11.99
14" MONITOR COVERS...................................£5.99

## SUPRA MODEMS

**The Supra-Fax Modem V.32 bis (14400 baud !!!)**
Allows you to send and receive fax messages. This new modem from Supra has full 14400 baud capability. Spec includes V.32bis, V.32, V.22bis, V22, V21, MNP2-5, V.42, V42bis, Class 1 & 2 commands, 9600/14400 Group 3 Fax. Includes free comms software and modem cable
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OR £279.99 with
Heavy duty Prima power supply, recommended for use with the V32 bis fax modem only £10.00 when bought with modem

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With the ability to send faxes! Even faster than the standard 2400 from Supra with auto dial & auto receive. 9600 bps Hayes comp. V22, V42 Bis, MNP 2-5 & auto adjust to maximise transmission speeds. Includes free modem cable & comms s/w!!
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GP FAX SOFTWARE only £29.99 if bought with modem

**Supra 2400**
Get on line using this great value fast modem with auto dial & receive. 2400 baud Hayes comp, V22 BIS. Inc modem cable & comms s/w!!
only £79.99

All Supra Modems come with a 5 year warranty!!

## PRIMA A500 PLUS & A600 RAM

BEWARE of cheaper RAM expansions. Some dubious companies use second hand used chips. We only use new chips of the finest quality and reliability!!

3 YEAR WARRANTY!!

| | A500P | A600 |
|---|---|---|
| Unpopulated | only £16.99 | £23.99 |
| Populated to 512K | only £29.99 | £36.99 |
| Populated to 1 Mb | only £37.99 | £46.99 |

2 Mb A600 OR A1200 RAM card..£119.99
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AMIGA A500 512K RAM by PRIMA for the original 1.2/1.3 AMIGA..only £27.99

## PRIMA ROM SHARERS

Because some older software will not run on Kickstart 2 First Computers launched the PRIMA (as supplied to Phoenix) ROM sharer. This high quality ROM sharer features a flexible ribbon connection so that it can be positioned anywhere within your A500 Plus or A600. Full 2 year replacement warranty

now only £19.99 or £27.99 for keyboard switchable version

## SUPRA RAM

Simply the best! Fits onto the side expansion port. Auto-configures with no software patching.

When 256*4 ZIPS are used, the Supra RAM can only be populated up to 2 Mb without replacing with 1 Mb by 4 ZIPS.

8Mb pop to 1Mb....£89.99
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8Mb pop to 2 Mb for 2000/1500 range......£149.99

## NEW!! ACCELERATORS

The A5000 comes complete with Maths Co-pro

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A5000 + 3mB 16.67 Mhz.........£229.99
A5000 + 4mB 16.67 Mhz.........£264.99
A5000 + 1mB 25 Mhz............£279.99
A5000 + 2mB 25 Mhz............£324.99
A5000 + 3mB 25 Mhz............£419.99
A5000 + 4mB 25 Mhz............£599.99

## GVP GVP PRODUCTS

### AMIGA A500 HARD DRIVES

NEW LOW PRICES!!

GVP Series II HD8+ 42Mb..........only £299.99
GVP Series II HD8+ 80Mb........only £374.99
GVP Series II HD8+ 120Mb........only £469.99

### A500 GVP Combo's

A530 Combo 40MHz/42Mb HD..only £669.99
A530 Combo 40MHz/80Mb HD..only £759.99
A530 Combo 40MHz/120Mb HD..only £849.99
A530 Combo 40MHz/213Mb HD..only £939.99
68882 Co-Processor Kit for A530..only £214.99
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Impact Series II HC8+ with 42Mb HD..only £289.99
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G-Force 030-25MHz with 1Mb 32 bit RAM.only £459.99
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G-Force 040-28MHz with 2Mb 32 bit RAM for A3000 only £1379.99

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### ROCTEC A500 CONTROLLER CARD

Very similar in style to the GVP HD8+ but without a hard drive so you can fit your own. Expands to 8Mb of RAM using SIMMS

only £164.99

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## POWER SCANNER V3

With the latest version 3 sofware for bright & sharp grey scale performance. Flexible scanned image display manipulation options, plus Clean up, embolden, resize & flip.

NEW!! only £114.99 on demo

Colour version only £229.99

EPSON GS6500 COLOUR FLATBED only £799.99 phone for details & demo

## MICE & TRACKERBALLS

NAKSHA MOUSE only £24.99

with Operation Stealth, mouse mat, holder and 2 year warranty, 290 DPI.

Golden Image Mega Mouse

Fully micro-switched.

only £12.99

ALPHADATA OPTICAL PEN MOUSE only £37.99

GOLDEN IMAGE Brush mouse

New concept in mice. Held in a similar way to a pen

only £22.99

Golden Image optical mouse..£29.99
Zydec Trackerball.............£29.99
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PRIMA 3.5"only £52.99

1 meg high quality external drive at a great low price.

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super slim Roclite. Best review for disk drives in Amiga Format. Now with built in virus checker and anti click device!!

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1 meg external drive. The best name in disc drives now at a great price.

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24 bit graphics card & video system for the 1500 2000/3000/4000. Includes software bundle

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## GENLOCKS

GVP Genlock only £349.99

features professional SVHS output

Rocgen Plus only £134.99

Includes dual control for overlay and keyhole effects, extra RGB pass thru

## ROCGEN ROCKEY

For creating special effects in video productionwith genlocks

only £269.99

## EMULATORS

KCS Power board.........£147.99

Regarded as one of the best emulators on the market.

1500/2000 adaptor..£59.99
MS-DOS 4 or 5..£POA
KCS Power board for A600......£167.99
Vortex Golden Gate 386..£389.99

This is a PC 386-25SX Bridgeboard running at 25 MHz

Vortex Golden Gate 486..£699.99

This is a PC 486-25SX Bridgeboard running at 25 MHz

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286 emulator now with 16Mhz clock speed.

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VXL30 25Mhz.................£229.99
VXL30 40 Mhz..................£349.99
68881 Co pro for above......£79.99
1 68882 Co pro for above...£119.99
32 bit 2 Mb ram for above...£189.99
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## ROMBO VIDI 12 £77.99!!

No filters or RGB splitter required. Colour images can be captured in less than a second, mono images are grabbed in real time. Compatible with any video source. Inc. multitasking software, cut & paste with masking, multiframe store with animated playback, composite or s-video input, 4096 HAM support.

Sound & Vision £99.99!!

Vidi 12 with built in Megamix Master!!

TAKE 2 £39.99!!

Features include load and save from D. Paint animations and IFF files. Supports HAM graphics.

Megamix Master £29.99!!

8 bit, high spec. sampler. Special effects include echo that can be added in real time, fully multitasking & easy to use.

## NEW!! MICROBOTICS

The new MBX1200 CO-PROCESSOR & RAM BOARD for the AMIGA 1200

Realise the full potential of your A1200 with this trapdoor expansion

68881 14MHZ..........£133.00
68882 25MHZ..........£199.00
68882 50MHZ..........£399.00
1mb 32 bit fast RAM ....£62.99
2mb 32 bit fast RAM ..£119.99
4mb 32 bit fast RAM ..£204.99

## DRAM & CUSTOM CHIPS

1mb by 8/9 SIMMS (3 chip)..£28.99 per Mb
4 Mb by 9 Simms ..............£114.99 per 4 Mb
1 Mb by 4 DRAMS..............£42.99 per 1 Mb
1 Mb by 4 ZIPS.............only £39.99 per Mb
256 by 4 DRAM (DILs) ideal for A590 and others
4+ (512K)............................now only £3.49
8+ (1Mb)..............................now only £3.29
16+ (2Mb)............................now only £3.09
Kickstart 1.3..........................................£27.99
Kickstart 2.04........................................£35.99
Fatter Agnes 8372A...............................£32.99
Super Denise..........................................£23.99
6571-0326 Keyboard controller...............£9.99
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## ACCESSORIES

Real Time A1200 internal clock module...............£14.99
Tecno Plus Pro Midi Interface with Sequencer 1 Plus and 2 midi cables .......................only £41.99
Mouse/joystick port switcher.......................only £13.99
Computer Video Scart Switch.......................only £19.99
2 way Parallel port sharer box inc cable.....only £17.99
Amiga Sound Enhancer Plus by Omega Projects. Hear the Amiga's sound like you've never heard it before!............only £36.99
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QUALITY MOUSE MATS.............................£3.99
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100 CAP LOCKABLE DISK BOX......................£6.99
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*add £3.00 delivery if purchasing just one Posso or Banx box. Free delivery when purchased with other product or when buying 2 or more.
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AMIGA 600 COVER.......................................£2.99
14" MONITOR DUSTCOVER............................£6.99
12" MONITOR DUSTCOVER............................£5.99
AMIGA TO SCART CABLES.............................£9.99
STD 1.8 METRE AMIGA PRINTER LEAD..........£4.99
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## DISKS

All 3.5" disks are GUARANTEED FOR A LIFETIME & are CERTIFIED 100% ERROR FREE. Our DS/DD disks are high quality magnetic media & are extensively used by duplicating houses

| QTY | 3.5" Bulk | OR VERBATUM BRANDED |
|---|---|---|
| 10 | £5.29 | £6.99 |
| 30 | £15.29 | £17.99 |
| 50 | £22.99 | £28.99 |
| 100 | £41.99 | £54.99 |
| 200 | £74.99 | £99.99 |
| 500 | £172.99 | £POA |
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Branded disks come complete with labels
Disk Labels...500...now only £6.99
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## SOFTWARE

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Home Accounts 2.............................£37.99
INTERSPREAD...................only £24.99
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Excellent integrated business/office pack, with powerful 123 comp spreadsheet, word processor & database

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inc. Kids Type, Weather Watcher, Calender Quiz, Words & Numbers, Game Set & Match + What is it? Where is it?
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NEW!! SUPER JAM...................................£42.99

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AMIGA RELEASE 2 UPGRADE KIT

Complete with: Kickstart 2.04 CHIP, Workbench 2.04, Install, Fonts & Extras disks full manual set only £77.99

NEW!! Cross Dos V5.....................................£29.99
Directory Opus 3.........................................£26.99
NEW!! Directory Opus 4..............................£49.99
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Latest version of this Fast & Famous hard disk backup utility.
Quarterback Tools............................now only £43.99
Xcopy Pro inc. hardware..............................£33.99

### VIDEO AND GRAPHICS

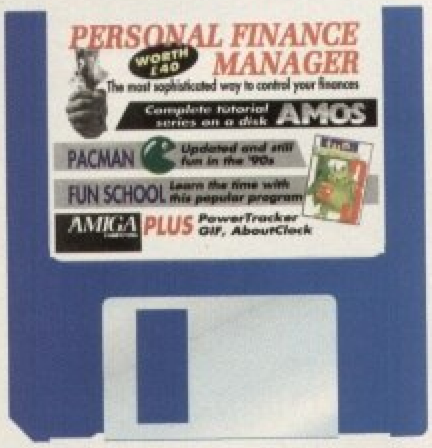
DIGI-VIEW GOLD MEDIA SYSTEM

Complete graphics presentation package. Complete with Digi-View Gold, Digi-Paint 3 & Elan Performer now only £119.99

37 Compugraphic fonts Vol 1, 2, or 3 by GT.only £9.99
NEW!! Adorage (creates special video effects).£61.99
Art Department Pro 2.1.........................only £129.99
NEW!! ART EXPRESSIONS.........By Soft Logic £145.99
NEW!! BRILLIANCE Pro. paint and Animation...£144.99
NEW!! CALIGARI 24 3D Design and animation.....£239.99
NEW!! Deluxe Paint 4 AA..............................£69.99
EXPERT DRAW....................................only £49.99
EXPERT 4D JR.....................................only £37.99
Flexidump printer utility..............................£31.99
NEW LOW PRICE!! Imagine V2....................£119.99
Make Path for Vista........................................£28.99
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TRUE PRINT/24.............................................£41.99
NEW!! VIDEO DIRECTOR................................£124.99
NEW!! VIDEO MASTER...................................£49.99
NEW!! Vista Pro 2 (2 Mb required).................£57.99

### WORD PROCESSING/DTP

FINAL COPY UK version 2!!....only £65.99
From the writers of PenPal. inc. built in outline fonts, full graphics import capability (IFF and HAM), UK thesaurus, spelling checker & detector, insert date, time, & page no, crop & scale graphics, multiple columns, magnified & reduced page view & much more.
New! KINDWORDS V3...only £36.99
Very similar to Wordworth
PENPAL 1.4..........................only £39.99
Best selling feature packed word publisher with database.
PAGESTREAM 2.2..............only £126.99
Powerful DTP package that we recommend and use.
NEW!! PAGESETTER3......................................£42.99
NEW!! Personal Write......Postscript compatible..£17.99
Hot Links.....................................................£48.99
NEW!! PRO PAGE PROFESSIONAL V4...£POA
Pro Page professional V3 DTP...now £99.99
Protext 4.3 W/P.................................now only £39.99
Protext 5.5 W/P.................................now only £74.99
NEW!! Prowrite 3.3.........................................£38.99
NEW PRICE!! THE PUBLISHER DTP...........£31.99
WORDWORTH 2 word publisher........£72.99
requires 1.5 Mb RAM and 2 drives or HD




**Take control of your personal loot with Microdeal's PFM and let this easy to use finance management program keep you on top of those precious pounds and pennies...**

the DISK

# Personal Finance Manager

PFM is a no-nonsense, easy-to-use database specially designed to help you take control of your personal resources. It will help you to keep track of your bank account details including standing orders, saving accounts, credit card payments and similar transactions.

Once set up, PFM will automatically deduct or credit any regular payments you make from you account, ie credit card payments, mortgage payments, bank loans and general regular payments, leaving you to simply add your more irregular transactions.

When you load up PFM you will be asked to input the name of the file you wish to view or update – you'll see the name Account.MNY displayed in the file box.

Now click inside the file box and change this to the name you wish to use for your account, but don't forget to add the file extension .MNY to the end of the file name as PFM will only load files with the suffix.MNY

Once you have named your new account, PFM will open up its main screen with your selected name at the top. This screen is where you can input a new account's details.

Now down to inputting some details. Select New Entry from the pull-down menus under Updates. You will now see the account transaction form. The first thing we need to input is the account's opening balance. Enter the following details in the appropriate boxes:

| | |
|---|---|
| Date | 28/1/93 |
| Amount | 1000 |
| Budget Code | (leave this blank) |
| Description | Balance |

Then click on the Credit button to make the balance amount positive, and click on the Done button. You've created a new account with a opening balance of £1,000.

If you clicked Done and notice that you've made a mistake, click on the line with the mistake in and select Edit Entry – this will allow you correct the information you have inputted. Now you simply keep adding items in the same way as you did with the balance.

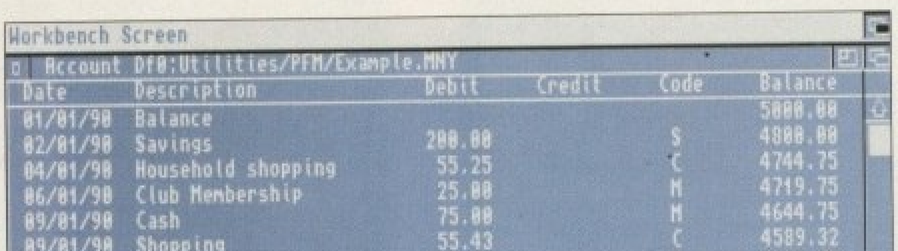
If you want to add a regular payment, say your mortgage, which will come out of your account on a regular basis on the same date in every month or week, you select View Standing Orders from the Report menu.

You will now see a blank box appear with the heading Standing Orders. Select New Entry from the Update menu. Now fill in the details as follows:

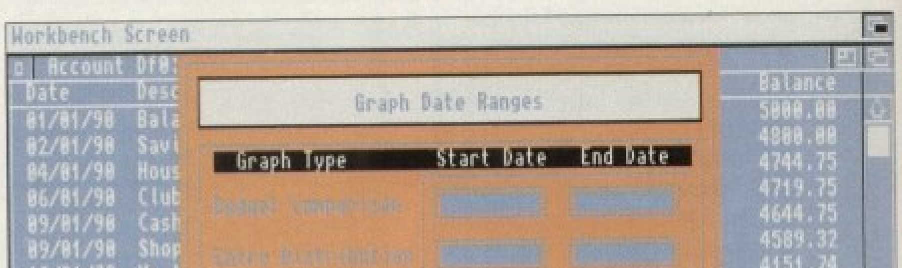
| | |
|---|---|
| Description | Mortgage |
| Amount | 12.00 |
| Start Date | 29/93 |
| End Date | 15/93 |
| Budget Code | M |

Click on the Debit button so PFM knows this is to be deducted. Now every month on the date specified PFM will automatically debit £120 and update your balance.

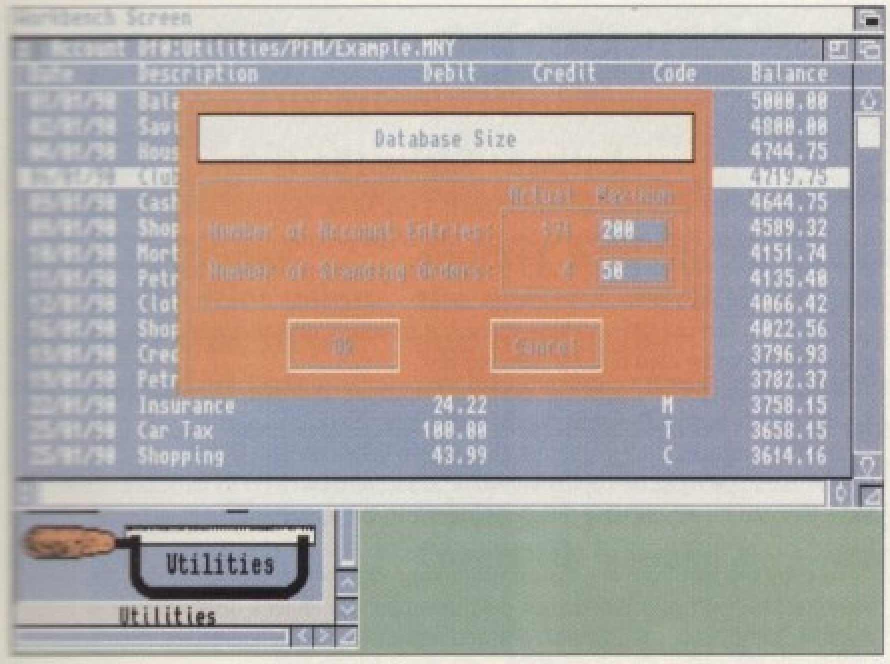
To go back to displaying your full




*Clear, easy to read display helps you to work out why you're always in the red*




*You can display specified details in graph format easily with PFM*



Keeping track of standing orders easily with PFM

account details, click on the close window icon in the top left-hand corner of the Standing Order window.

PFM can also display your account details in graphical form. This is a good way of instantly seeing which areas of your budget are largest. To see this in action, load the example file on the CoverDisk then select Budget Comparison from the Report menu.

You will now be presented with a graph showing each type of transaction's total and a comparison of how your budget is.

You can also set up a graph to display only transactions between certain dates which you can pre-define. To do this, select Budget Comparison from the Report menu and note the dates and the general shape of the graph.

Now pull down the Graph Dates from the options and enter the new dates which you wish to view, ie start date and end date in the Budget Comparison box. Now click on the OK button and the graph should be redrawn, but only between the dates you specified.

We don't have space here to tell you about all of the features PFM has to offer, so if you like the look of it, why not take advantage of our manual offer or even our brilliant upgrade offer enabling you to upgrade to PFM+? Details follow the CoverDisk pages.

## Fun School – Time

### Europress software

Last month we gave away Letters, a module from the Fun School range of educational software, which is aimed at teaching children in the under fives bracket the alphabet.

Following on from that, this month we've included Time, another one of Fun School's modules.

Time teaches children how to tell the time using colourful animations and sound. Once it is running you'll see a clock in the top left-hand corner and a row of boxes across the bottom of the screen.

The idea is that the computer sets the clock to different times randomly and you child has to use the boxes in the bottom of the screen to match the time the computer has picked.

All of this is done using the two mouse buttons. The right button moves the flashing box along to your choice and the left button confirms your selection.

Once your child has answered enough questions, they will be rewarded with teddy bear animation, and then asked if they wish to progress to the next level. You can exit Time at any point by pressing the Esc button.

## Pacman

### Author: Edgar M Vigdal

Pacman is probably the third oldest game around next to Space Invaders and Breakout. Even so, this version has to be one of the best around.

Just in case anyone reading this has been visiting another planet for the last 15 or so years, the idea with Pacman is to eat as many power pills as possible, taking care not to bump into the ghosts.

This may sound quite an easy task until you actually try it. You see the problem is that the ghosts just won't leave you alone. You can get your own back on these beasts by eating one of the special power pills which turn them blue for a short time enabling you to eat them.

Occasionally special items appear in the middle of the screen – eating these will give you special powers like extra speed, a gun, and even glue which makes the ghosts run slower. You can also collect letters which spell EXTRA; this gives you an extra life. Controlling Pacman can be done with mouse, keys and joystick. The movements are up, down, left and right. The Fire button activates things like the gun and other goodies which you can collect.

There are three levels which are selected by pressing the numbers 1 to 3, 1 being the slow easy level and 3 the ultra fast.

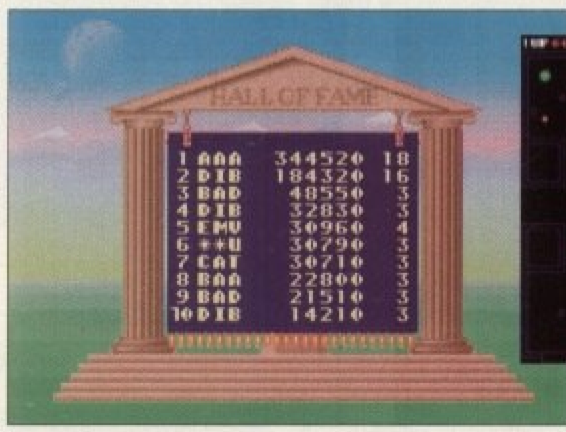
You can also have a two-player game by pressing the F2 Key or just F1 for one player. The letter E during the game toggles between music and sound effects, and F10 is the pause key.

## PowerTracker

### Author: Wai Hung Liu

PowerTracker is a music module player enabling you to load and play modules from quite a few different Tracker programs, such as SoundTracker x.x, Noisetracker x.x, Protracker 1.0-2.1b and Startrekker (four-channel only).

If you have music modules created with programs other than those listed here then try loading them, the chances are they will still work. PowerTracker will also load powerpacked files. When you have




The esteemed high score table



Yum yum what more canyou say?

## Faulty disk?

**If you subscribe and your disk has been damaged in the post, please return it to: Amiga CoverDisk, Europress Direct, FREEPOST, Ellesmere Port, South Wirral L65 3EB.**

**If you bought your magazine from a shop and found that the CoverDisk was damaged, please return within two months to: Stanley Precision, Unit F, Cavendish Courtyard, Sallow Road, Weldon North Ind Estate, Corby NN17 1JX.**

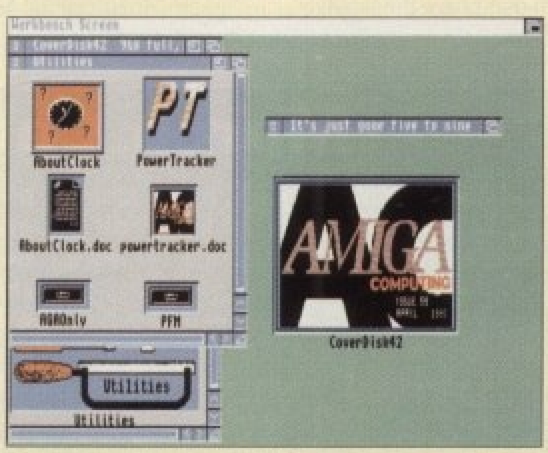
## AboutClock

### Author: Stuart Davis

If you're tired of looking at that same old Workbench clock then this program is for you. AboutClock displays the time in words but in a very laid back manner, so when it is 9.54am, AboutClock will print on screen "it's nearly five to ten".

When activated by double clicking on its icon, AboutClock will appear near to the top of the screen in a small bar which automatically starts displaying the time. Obviously if your machine has not had its clock set correctly then AboutClock will be wrong.

To set your machine's clock, load your Workbench, go to the Prefs drawer and select Time. This will fetch up the clock and date preferences, then simply set the date and time accordingly. One thing to note – if you don't have a battery-backed clock is that the changes you make will only last until you switch off your machine.



At last, a usable Workbench clock

AboutClock can either be loaded manually by clicking on its icon or by adding it to your startup sequence, which will then automatically call up AboutClock every time you reset or switch on your machine.

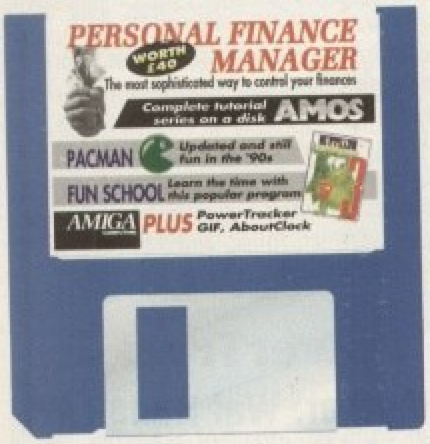
The command to call AboutClock up in your startup sequence is:

Replace the word Path with the directory you have copied:

```
run >nil: <nil: Path:Aboutclock
```

AboutClock to, ie:

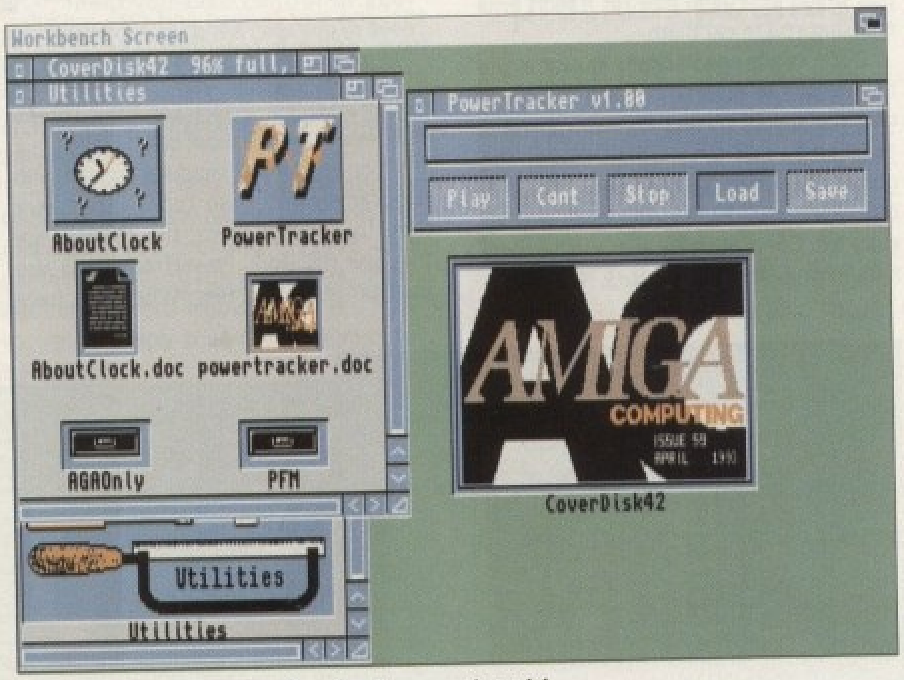
```
run >nil: <nil: c:Aboutclock
```




## CoverDisk Hotline

**Hotline number: 0625 859766**
**Between 2pm to 5pm every Thursday**

**If you are experiencing problems with the CoverDisk then contact our Technical Editor, David Dibnah, on the CoverDisk Hotline. The Hotline number is only available between the times stated above, so don't waste your time trying to ring outside this time.**




*Pomertracker an easy way to play virtually any music module*

PowerTracker running, click on the load gadget – you will then be presented with the familiar file requester from Workbench.

Now insert your disk with the music module on that you wish to listen to, and select the file you want. Once loaded you can then press the Play gadget and away you go.

With this program running directly from Workbench you can also load other applications while still listening to your music, but you must not load any other music package at the same time as this will result in your machine crashing.

This will send the entire document to your printer. There's no need to worry about printer prefs as the CoverDisk has a Generic printer driver which will print out on virtually any printer, although it will only be in draft mode.

On the CoverDisk we use MMPP to display documents as it is capable of handling the PowerPacked files which we use. MMPP has a help option which can be called up while viewing files by pressing the Help key, and pressing the Help key again takes you back to your document.

Because all of the files on the CoverDisk are crunched you will have trouble trying to load them into other text readers which don't have the facility to load crunched files.

## The Complete Amos Almanac

This month we've included an Amos text file which contains all of the Amos Almanac pages from the last 18 months. To view this file simply double click on its icon, and the file will be displayed in the same style as the usual docs which are on the disk.

If you wish to print out this document then double click on the documents icon to load and display it, making sure you have your printer switched on, and then press:

```
Shift+Alt+0
```

## GIF Datatype

### Workbench 3 only

### Author : Steve the G

GIF is only for use with the new WorkBench 3 machines, ie A1200 and the A4000. GIF is actually a data type which enables the MultiView program on WorkBench 3 to display 256-colour GIF pictures. It also enables any program which is datatype-aware to read GIF files.

Before you can use GIF you have to copy it to your WorkBench disk or to your hard drive – it cannot be used directly from this disk.

There are three files to the GIF program which are all in the AGAonly draw. These are the GIF file itself, GIF.datatype and the GIF.doc.

The GIF program itself should be copied into your DEVS:DATATYPES directory and the GIF.datatype must be copied into your SYS:CLASS/DATATYPES directory. Copying these files can be achieved by dragging them into the appropriate drawers or by using CLI.

To copy the files from the CoverDisk to your Workbench disk using CLI, first boot your machine with your Workbench disk, then open up either a Shell window or a CLI window. Remove your Workbench disk and replace it with the CoverDisk, then type:

```
Copy df0:Utilities/AGAonly/GIF to sys:Devs/Datatypes
Copy df0:Utilities/AGAonly/GIF.info to sys:Devs/Datatypes
Copy df0:Utilities/AGAonly/GIF.Datatype to sys:Classes
```

If you have a hard drive then simply follow the same instructions as above but remember to boot from your hard drive.

Once you have installed these files in their correct position, just double click on the GIF icon to activate the datatype. You should now be able to load and display GIF pictures like those commonly found on the PC.

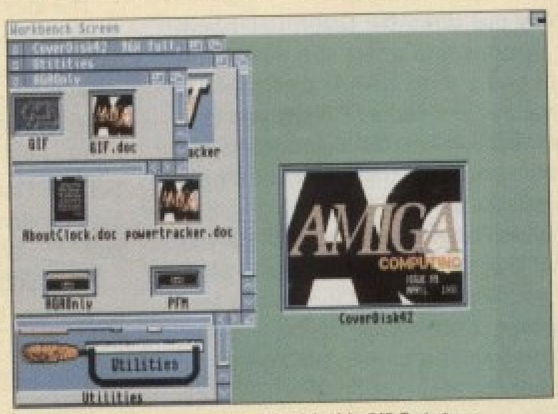
If you wish to access this datatype automatically every time you use MultiView, you have to use the Adddatatypes command. This will permanently add GIF to the list of datatypes your MultiView can use. To do this open a shell window and type:

```
Adddatatypes Refresh
```

Using this command will update all the datatypes you have in your Devs/Datatypes drawer.

Unfortunately when you load GIF picture file it can take quite a while. Also if you load a 256-colour GIF file with MultiView set to display in a Window, then you will only get as many colours as you have set Workbench to, so if Workbench is set to four colours then you will only get four!

If you want MultiView to display picture files on its own screen enabling 256 colours regardless of Workbench settings then you will have to alter its icon. This is quite easy – just click once on its icon then select Information from Workbench's pull-down menus.




*Make Multiview more powrful with this GIF Datatype*

You will find all the information about MultiView on screen. Just find the line which says "(screen)", click on it, edit it to say "screen" then click on Save. MultiView will now load picture files and display them on its own screen.

## March CoverDisk

**Unfortunately people with Workbench 1.3 or lower machines are having some problems with last month's CoverDisk. The problem was with the startup sequence on the disk and a missing IF statement from the "C" directory.**

**So this month we have included a small script file which will make the adjustments required automatically to the March disk.**

**To use this Fix file simply Bootup your machine with this month's CoverDisk in and then double click on the Fix it icon. Your machine will then copy all the files it needs from this month's disk into its memory, and will then ask for last month's CoverDisk (make sure you do this with a copy and not the original). Finally, it will proceed to copy all of the files across which are needed.**

**If you then reboot your machine with last month's disk everything should work as normal. We offer our apologies to anyone who has been affected by this mistake.**

# The *Amiga Computing* CoverDisk is designed to be as simple to use as possible. Follow these instructions and you'll be up and running in no time!




**New readers may have difficulties using our CoverDisk, so we have included this page to help you out. Below we explain how to copy files from one disk to another, how to copy the entire CoverDisk and how to de-archive programs.**

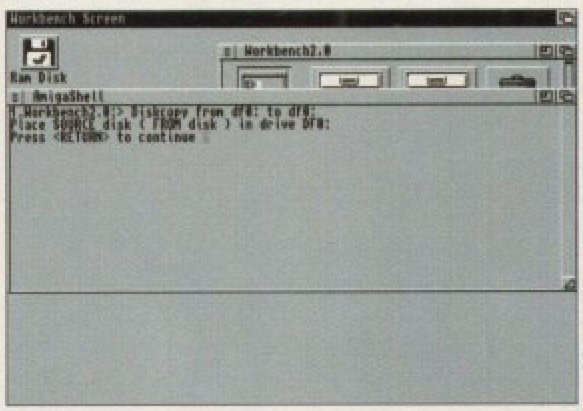
**One of the first things you must do when get your CoverDisk is make a backup copy, then put the original CoverDisk away for safe keeping. As a rule you should also do this with the majority of your software collection.**

## How to make a backup

To copy the entire CoverDisk, load up your Workbench disk, then either click once on the CoverDisk icon and select Duplicate, or select Copy from the Workbench menu, or open CLI/Shell and type:

```
DISKCOPY FROM DF0: TO DF0:
```

When prompted, put your CoverDisk (the source disk) in df0: and be ready to replace it with your blank disk (the destination disk). Follow the Amiga's on-screen prompts until the disk copy is completed. Now put the original away in a safe place and use your backup.




## Copying individual files

You might at some point want to copy a single program from a CoverDisk to your compilation, Workbench disk or even your hard drive.

To do this you'll need the COPY command. As most CoverDisk programs are stashed away in their own directories, the quickest way to copy a program is to copy the whole directory at once. Use the command:

```
COPY {directory} TO {newdisk} ALL
```

where {directory} is the full pathname of the directory you wish to copy, and {newdisk} is the name of the disk and directory into which it will be copied.

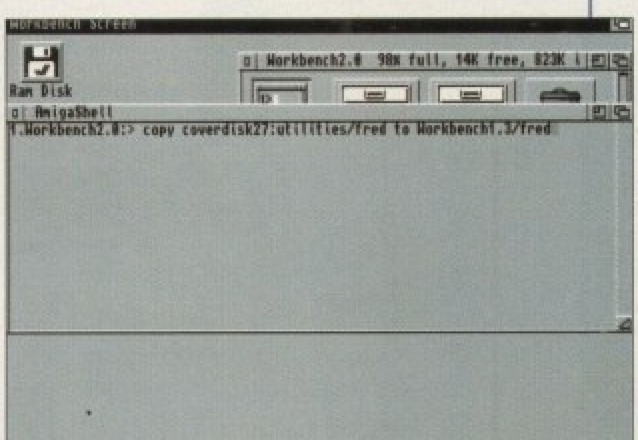
For example, if you wanted to copy a utility called FRED from CoverDisk 27's Utilities drawer to a directory called FRED on your Workbench disk, you'd type:

```
COPY COVERDISK27:UTILITIES/FRED TO WORKBENCH1.3/FRED ALL
```

Alternatively, you can click once on the FRED directory icon and drag it across to the new disk's window. This has the advantage of creating a new directory for you and copying the icon as well.

Once you have moved a particular program to where you require it you could experience some problems running the program. This is sometimes caused by the program not being able to find files which it needs to run.

A good example is the text files on the CoverDisk. These have been crunched using PowerPacker, so when you try to copy them to another disk and then try to read them you can't unless you have also copied the Powerpacker library into your LIBS drawer.




So if you have copied a program from the CoverDisk to your Work disk or hard drive make sure you also copy any other files the program requires, ie fonts, libraries, device drivers and Ccommands.

## De-archiving

Occasionally we have so many programs to fit onto the CoverDisk that we have to archive them. Archiving is where we take the entire contents of a disk and compress them into one file which is much smaller, giving us space to fit more programs onto the disk.

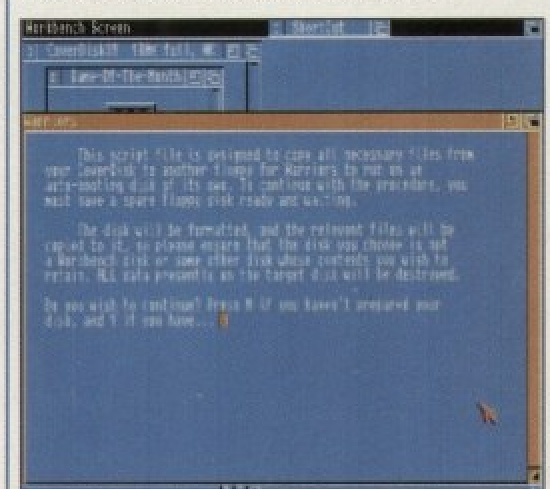
Dearchiving programs which are on the CoverDisk is a very simple task. If a program has been archived then you will need a blank disk to dearchive it onto.

Say we have archived a program called FRED. You simply double click on FRED's icon, and will be asked if you have a blank disk ready to dearchive to. Type "y" or "n" accordingly.

Your computer will then copy the archived file into its memory and ask you to insert your blank disk. It will proceed to format the disk, and will then de-crunch the archived file onto your blank disk.

Once this has been done you can simply reboot your machine with the disk which contains the dearchived program on it and then use the program as instructed in the CoverDisk pages.

Note that if you have a Workbench 2 or upward machine you must boot with the CoverDisk write-enabled to perform the dearchiving process.



## Workbench 3



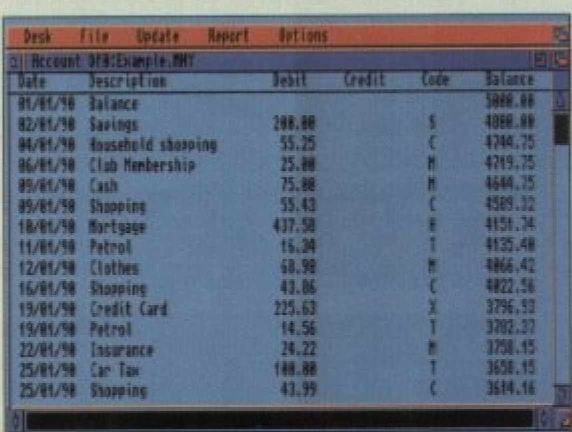

If you have a Workbench 3 machine, don't worry – most if not all of the programs on the CoverDisk will work on your machines.

If the program is specifically designed to work with Workbench 3 then you may have to copy the program to your hard drive or Workbench disk using the process described earlier on this page.

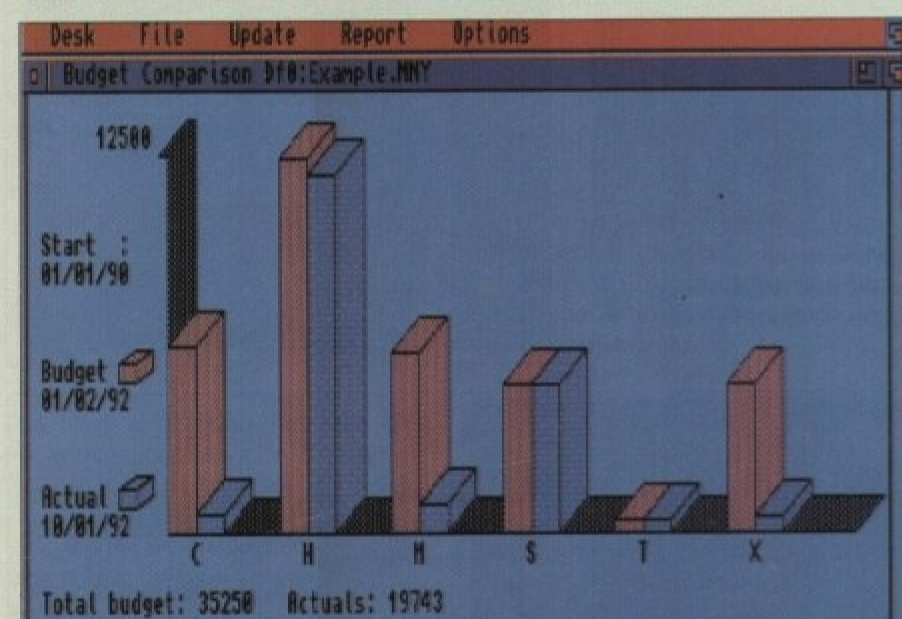
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Expiry Date_/_

Card No. ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

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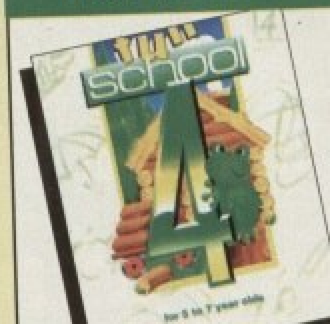


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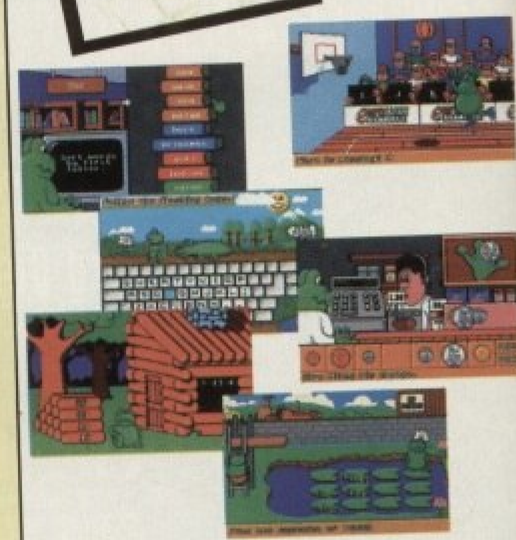


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You can phone your orders in on 0525 718181, quoting ref no. ACHB1 / Q9 or send the form below to HiSoft, The Old School, Greenfield, Bedford MK45 5DE. Allow 28 days for delivery.

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Available as either...
**Pack with Deluxe Paint III and a MYSTERY game**
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If you want a DIFFERENT SIZE hard drive simply ask for the price! You can choose from either a 60Mb. or 80Mb. Capacity Drive.



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68020 PROCESSOR

the latest AMIGA...
THE FIRST NEW AMIGA FOR 5 YEARS
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From VIC 20 to AMIGA CDTV
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# the extensive range of peripherals and software

## EXPAND your system... and get MORE from your AMIGA

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## AMIGA PRINTERS
DOT MATRIX INKJETS AND LASERS

All our printers are supplied for immediate use including a cable, paper and labels FREE OF CHARGE. Dot matrix models come with a tailored dust cover. We also include our specific Amiga driver disks for Citizens, Stars and Canons. ALL Citizens have a 2Year Warranty

**Please call for prices on any models not listed**

### 9 PIN PRINTERS
9 PIN DOT MATRIX

| | |
|---|---|
| STAR LC 20 MONO | £139.95 |
| NEW STAR LC 100 COLOUR | £164.95 |
| STAR LC 200 COLOUR | £204.95 |
| CITIZEN 120D+ MONO | £129.95 |
| CITIZEN SWIFT 9 COLOUR | £179.95 |

### 24 PIN PRINTERS
24 PIN DOT MATRIX

| | |
|---|---|
| STAR | |
| LC 24/200 COLOUR | £279.95 |
| XB 24/200 COLOUR | £389.95 |
| CITIZEN | |
| SWIFT 200 MONO | £209.95 |
| SWIFT 200 COLOUR | £239.95 |
| SWIFT 240 MONO | £259.95 |
| SWIFT 240 COLOUR | £279.95 |

### HIGH-RES PRINTERS
HIGH RESOLUTION

| | |
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| STAR SJ48 INKJET | £209.95 |
| CANON BJ10ex INKJET | £224.95 |
| NEW...Superfast CANON BJ200 INKJET PRINTER - 250cps! Inc. automatic sheet feeder | £349.95 |
| HP DESKJET | |
| 500 MONO | £369.95 |
| 500 COLOUR | £459.95 |
| HP DESKJET | |
| 550 COLOUR | £589.95 |

## BRAND NEW LOW COST STAR LASERS

**Three Superfast NEW LaserPrinters from Star which offer SUPERB QUALITY PRINTOUT & all have great standard features...**
**5ppm, 14 Resident Fonts + 15 True Type PC Fonts, LCD Display, Combined 300 Sheet Capacity Dual Paper Feeds, 1 Year On-Site Warranty and more...**

| Model | Speed | Memory | Compatibility | Fonts | Interfaces | Resolution | Price |
|---|---|---|---|---|---|---|---|
| LS-5 | 5ppm | 512K exp. to 4.5Mb. | HP Laserjet IIP [PCL4] | 14std+15PC | Auto Parallel & Serial | 300x300 dpi | £629.95 |
| LS-5EX | 5ppm | 1Mb. exp. to 7Mb. | HP L/J IIP[PCL4], III[PCL5], HPGL2 | 14std+15PC +8PCL5Agfa | Auto Parallel & Serial | 300x300 & 600x300dpi | £749.95 |
| LS-5TT | 5ppm | 2Mb. exp. to 8Mb. | As LS-5EX plus: TrueImage [Microsoft Postscript], Apple Laserwriter+ | 14std+15 PC +8PCL5Agfa +35TrueType +35Postscript | Auto Parallel & Serial plus Appletalk | 300x300 & 600x300dpi | £999.95 |

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| PRINTER | PRINTER TYPE | BLACK RIBBON | BLACK RIBBON 'SIX PACK' | COLOUR RIBBON | COLOUR RIBBON 'SIX PACK' |
|---|---|---|---|---|---|
| CITIZEN 120D+ | BLACK ONLY | £4.75 | £22.95 | N/A | N/A |
| CITIZEN 124 | BLACK ONLY | £4.75 | £22.95 | N/A | N/A |
| CITIZEN SWIFT 9 | BLACK/COLOUR | £4.75 | £22.95 | £16.45 | £94.95 |
| SWIFT 24/24E/224 | BLACK/COLOUR | £4.75 | £22.95 | £16.45 | £94.95 |
| STAR LC10/20/100 | BLACK/COLOUR | £4.45 | £23.95 | £5.95 | £34.95 |
| STAR LC200 | BLACK/COLOUR | £5.95 ZX9 | £32.95 ZX9 | £12.45 ZX9CL | £64.95 ZX9CL |
| STAR LC24/200 | BLACK/COLOUR | £6.95 Z24 | £39.95 Z24 | £12.95 X24CL | £69.95 X24CL |
| STAR XB RANGE | BLACK/COLOUR | £8.95 Z24 | £49.95 Z24 | £14.95 X24CL | £74.95 X24CL |
| STAR SJ48 INK CARTRIDGE | BLACK ONLY | Also compatible with Apple Stylewriter and Canon BJ10ex Bubblejet | | | £15.95ea. |

**Hewlett Packard** Original Consumables

| | |
|---|---|
| **DESKJET 500...** | |
| Black Ink Cartridge | £21.95 |
| [Double Life] | £25.95 |
| Colour Ink Cartridge [Std] | |
| **PAINTJET...** | £22.95 |
| Black Ink Cartridge | £24.95 |
| Colour Ink Cartridge | £20.95 |
| Single Sheet Paper | £18.95 |
| Z-Fold Paper | £52.95 |
| Transparency Film: [Pack of 50 Sheets] | |

**Please phone for items not listed**

**Citizen Accessories:**

| | |
|---|---|
| 80 Column 9/24 Pin Printer Colour Kit [ALL models except the Citizen 124 model] | £37.95 |
| 32K RAM Expansion [24Pin Citizens except 200/240] | £13.95 |
| 32K RAM Expansion [Citizen 200/240] | £19.95 |
| 128K RAM Expansion [Citizen 200/240] | £32.95 |

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A500 and PLUS

Simply plug in to the Amiga sideport

### HD8 Hard Drives

| RAM | 80Mb. | 120Mb. |
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| 0Mb. | £369.95 | £474.95 |
| 2Mb. | £419.95 | £524.95 |
| 4Mb. | £469.95 | £574.95 |
| 8Mb. | £599.95 | £709.95 |

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| RAM | 80Mb. | 120Mb. |
|---|---|---|
| 1Mb. | £739.95 | £804.95 |
| 2Mb. | £804.95 | £874.95 |
| 4Mb. | £904.95 | £984.95 |
| 8Mb. | £1079.95 | £1134.95 |

68882 Maths floating point unit for A530's £219.95

### AMIGA 1500 2000 internal HARD DISK DRIVE

### HC8 Hard Drives

| RAM | 80Mb. | 120Mb. |
|---|---|---|
| 0Mb. | £324.95 | £404.95 |
| 2Mb. | £374.95 | £454.95 |
| 4Mb. | £424.95 | £504.95 |
| 8Mb. | £524.95 | £604.95 |

NB!!! Hard drives fitted with memory may fluctuate in price due to the $/£ exchange rates. Please confirm prices when ordering.

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-LONG CONNECTING- CABLE - THROUGHPORT -
£57.95
A1200 COMPATIBLE TOO!!!

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| Kindwords 3 | £37.95 |
| Wordworth V2.0 | £109.95 |
| Transwrite | £29.95 |
| Prowrite 3.3 | £79.95 |
| Pagestream V2.2 | £159.95 |
| Professional PageV3.0 | £129.95 |
| Pagesetter II | £44.95 |
| SoftClips Clip Art... | |
| Classic Clip Art | £29.95 |
| People Clip Art | £29.95 |
| Collectors Clip Art | £29.95 |
| Animal Clip Art | £29.95 |
| Electric Thesaurus | £29.95 |

### integrated titles

| | |
|---|---|
| Mini Office | £42.95 |
| Gold Disk Office | £59.95 |

### databases

| | |
|---|---|
| Homebase | £19.95 |
| Superbase 2 Personal | £29.95 |
| Gallery Pictorial Slide Show/DB | £39.95 |

### CAD & structured drawing

| | |
|---|---|
| Intro CAD Plus | £79.95 |
| X-CAD 3000 | £269.95 |
| Professional Draw 3 | £89.95 |

### video

| | |
|---|---|
| Scala 500 | £74.95 |
| Scala Professional | £199.95 |
| Broadcast Titler 2 | £179.95 |
| Pro Video Post | £169.95 |
| Video Studio V3 | £119.95 |

### animation and graphics

| | |
|---|---|
| Deluxe Paint 4 | £64.95 |
| Real 3D Professional Turbo | £249.95 |
| Art Department Professional V2 | £144.95 |
| DCTV Composite Video 24-Bit Graphics System (PAL) | £379.95 |
| Imagine 2.0 | £199.95 |

### utilities & development

| | |
|---|---|
| Disk Master V2 | £44.95 |
| Quarterback V5 | £44.95 |
| Quarterback Tools | £54.95 |
| Dos-2-Dos | £29.95 |
| Easy Amos | £29.95 |
| Amos The Creator | £37.95 |
| Amos Compiler | £23.95 |
| Amos 3D | £25.95 |
| Amos Professional | £49.95 |
| New SAS Lattice C V6 | £219.95 |
| Devpac 3 | £54.95 |
| Directory Opus | £29.95 |

### miscellaneous

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|---|---|
| GB Route Plus | £37.95 |
| Professional Calc | £124.95 |

### games & entertainment

Phone for access to our massive competitively priced range now!

## AMIGA + - x ÷ a b c software FOR EDUCATION

easy learning for all ages right up to GCSE 'A' standards

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| micro english - to GCSE standards | £18.95 |
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| micro german - to GCSE standards | £18.95 |
| primary maths - 3to12's | £18.95 |
| mega maths - A level | £19.95 |
| reading and writing course - over 3's | £18.95 |
| compendium six | £27.95 |
| fun school 4 software: choose - under 5's, 5to7's or 7to11's, only... | £19.95 each |
| ADI titles 11to12: english | £18.95 |
| maths | £18.95 |
| french | £18.95 |
| ADI titles 12to13: english | £18.95 |
| maths | £18.95 |
| french | £18.95 |
| first shapes - 3to8 | £12.95 |
| puzzle story book - 3to8 | £19.95 |
| dinosaur discovery kit - 3to8 | £19.95 |
| first letters and words - 3to8 | £12.95 |
| NEW...Childs Play Activity Centre & Word Processor with SPEECH, 2to12yrs | £24.95 |

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|---|---|
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| Getting the most from your Amiga | £13.95 |
| Amiga Machine Language | £16.95 |
| Amiga DOS inside and out | £25.95 |
| Amiga Hardware reference manual | £22.95 |
| Amiga C for beginners | £16.95 |
| Other Books: ...call us with your requirements | |

## AMIGA accessories

### sound & graphic DIGITISERS

| | |
|---|---|
| Digiview Media Station | £134.95 |
| Colour Pic Plus | £679.95 |
| Super Pic | £579.95 |
| Rombo Vidi 12 | £89.95 |
| Amas 2 Sound Sampler & Midi Interface inc.Microphone | £74.95 |
| Audio Engineer Plus Sound Sampler | £179.95 |
| Technosound Turbo Sound Sampler | £32.95 |

### MUSIC

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|---|---|
| Miracle keyboard music teaching system for the Amiga | £299.95 |
| Music X full version 1.1 | £24.95 |
| Midi interface 5 port complete with cable | £24.95 |
| Super JAM | £79.95 |
| Bars & Pipes Professional | £219.95 |
| ZYFI Stereo Speakers with a separate power supply | £39.95 |

### SCANNERS

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|---|---|
| Power Mono Hand Held Scanner | £98.95 |
| Power Colour Hand Held Scanner | £239.95 |
| Sharp JX 100 Colour Flatbed [A6 Paper size] | £549.95 |

### genlocking devices

| | |
|---|---|
| ProGen - Perfect high quality entry level true video signal genlock | £64.95 |
| Rocgen Plus | £119.95 |
| Multi connection cable kit for all genlocks | £14.95 |

### AMIGA MICE

| | |
|---|---|
| Naksha Microswitched mouse with Mat & Holder | £21.95 |
| THE SUPERB ALFA DATA RANGE... | |
| HQ Microswitched mouse | £13.95 |
| HQ Microswitched mouse inc. Mouse Mat & Holder | £19.95 |
| High Quality microswitched Optical mouse | £28.95 |
| HQ Microswitched Trackball | £29.95 |
| Automatic Mouse and Joystick Switcher | £17.95 |

### IBM PC emulators

| | |
|---|---|
| KCS Powerboard Plus 512K RAM [Please state A500 or plus when ordering- not A600 compatible] Now supports most hard drives! supplied without DOS | £184.95 |
| supplied with DOS 4.01 | £214.95 |
| 1500/2000/3000 adaptor | £69.95 |
| GVP 286 PC emulator card for A500 HD8/530 (no DOS). Simply plugs into your GVP drive | £189.95 |

### monitor STANDS

| | |
|---|---|
| Premier Control Centre & Monitor Plinth with shelf: For Amiga A500 | £39.95 |
| For Amiga A600 | £34.95 |

### JOY sticks

| | |
|---|---|
| Zipstick autofire | £11.95 |
| Competition Pro-Star autofire, burstfire & slow motion | £13.95 |

Full range of Quickjoy and other makes stocked - call for prices

### BLANK DISKS

| | |
|---|---|
| 10 Sony 3.5" DS DD | £8.95 |
| 50 Sony 3.5" DS DD | £34.95 |
| Certified Bulk Disks with labels: 10 with library case | £6.95 |
| 50 Disks - only... | £24.95 |
| 250 Disks - only... | £89.95 |
| 3.5" Disk Head Cleaner essential for reliable loading | £2.95 |

*ALL PRICES ARE INCLUSIVE OF VAT AT 17.5%*

# GOLD SERVICE — COMPARE OUR GOLD SERVICE

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**FREE GOLD SERVICE:** Any computer, monitor or printer th requires service in the first year is collected FREE OF CHARGE (U Mainland only). Remember at Harwoods we charge no more for th GOLD service. The fastest turnaround possible is GUARANTEED by o OWN SERVICE ENGINEERS. -Many items have In-Home Warranties -

**TECHNICAL SUPPORT:** You will be given our Exclusive Technic Support Phone Number to call should you require any help or advic on any aspect of the system you have purchased.

**MINIMUM 12 MONTH HARDWARE WARRANTY:** Items provin faulty within 30 days of purchase are replaced with NEW UNIT unless otherwise stated. For the guarantee period, warranty servic will be completely FREE OF CHARGE [some items are 2 yr warranty

**YOUR SYSTEM READY TO GO:** All main hardware products com with mains plugs and leads - just connect up and use straight away.

*How to contact us...*

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*The Closer you look, The Better we look*

# Photographic memory

**With a digitiser you can transfer real life or videoed pictures straight into your Amiga... and then the fun really starts, says Gary Whitley**




Digitisers are interesting gadgets. They help save time and effort and get things done. They provide the means of turning video, printed images or photographs into files that a computer can use. And they can be invaluable to animators, desktop publishers and graphics people.

Nowadays there is a wide range of digitisers available for the Amiga, with prices and formats to suit all pockets and tastes, and they come in a variety of forms – from small external units to full-blown plug-in cards for the higher end Amigas.

There are video digitisers which rely on inputs from video devices such as cameras and video decks for their pictures, and there are scanners which are devices for converting paper-based images into computerised data. This article will concentrate on video digitisers.

The principle of operation of a video digitiser is quite straightforward – a video signal is fed in and first converted into digital data via electronic means. This data is then communicated to the host computer via an interface and software and is stored in a form which either the computer's operating system or software can understand.

In the Amiga's case this will usually mean being stored as an IFF (Interchange File Format) file – a standard file format used by the majority of Amiga graphic programs – though RGB (red, green and blue), 18-bit, 21-bit, 24-bit, RAW, YUV and several others might also be used.

All these files can ultimately be used by the Amiga though, so there's no need to worry about incompatibility when you are choosing a digitiser.

Some digitisers are capable of accepting Y/C (SVHS-type format) and, rarely, even RGB inputs and the results are usually noticeably superior to digitisers which only accept composite video – though this isn't always the case.

Either way, if a digitiser is capable of producing colour pictures the image will need to be split into red, green and blue components before being passed to the computer for reassembly into a full colour image. This can be achieved in two different ways – colour filters or colour splitters.

Colour filters are used with black and white video cameras and a separate scan of the image needs to be made through each of three coloured gels – one for red, one for green and one for blue.

Colour splitters perform an identical task to filters, but do it electronically. So in order to digitise a colour video signal a colour splitter would be required between the video device and the digi- ➤




*videomaster offers good animation at a low price*

tiser, passing each individual colour component for conversion to digital data. Some digitisers have integrated colour splitters, others require an external unit.

The need for colour splitting is common to all models of digitiser, but there is another important factor – the "speed" of the digitiser. In this respect there are two types – slow scan and fast scan which, as their names suggest, do exactly that.

Slow scan digitisers take a few seconds (or sometimes even minutes with certain models) to grab their subjects because they digitise one section of the image at a time. This requires the desired image to be completely motionless, whether it is in front of a camera or off videotape.

Fast scan digitisers have one simple advantage over slow scan models – speed. This is because they grab the image into a digital storage memory called a frame buffer and hold it there throughout the ensuing digitising process.

## Perfect

The grab usually takes place in the time it takes to display a single frame of video – 1/25th of a second – and from then on the image is at your disposal to grab and re-grab until you are happy with it, and you don't need to worry about the cat walking over your copy stand as you adjust the lighting for that final, perfect look.

Mind you, frame buffer technology costs extra, as you will see from the prices of digitisers which use this technique – though there's no denying that for professional use this is probably the only way to go.

Once the image has been converted into computer-accessible code the software really comes into its own. Each digitiser comes complete with its own unique software and each package contains features which are exclusive to that model.

Most software includes some degree of colour balancing and brightness/contrast control, while others have animation features, line-art modes, special save formats, cropping, resizing and so on.

However a digitiser operates, its ultimate aim is to convert images from outside the Amiga into pictures inside it. So once an image has been digitised it can be imported into any program compatible with its file format.

For instance, many IFF images can be loaded into Deluxe Paint for animating, others might be loaded into 24-bit systems for further manipulation – the choice is yours. Whether for DTP, animation, desktop video, presentation graphics, games production or cataloguing, digitising fulfils an important need for many computer users.

If you've ever used a digitiser you'll be aware that the maxim "you only get out what you put in" doesn't generally apply to digitising.

There are good reasons for this. The first is that the image resolution of a standard Amiga (or more specifically its monitor or display device) cannot hope to approach the fine quality which can be achieved on paper or in photographs and films.

The second is that in most cases it isn't possible to provide enough colours to fully represent the digitised image. The new AA chipset in the latest Amigas has gone a long way to redressing this problem, but 24-bit graphics are still the only way of achieving the highest possible quality.

Some programs offer dithering routines which create the illusion that an image contains more colours than it actually does, while others such as DCTV use special display techniques to show more colours.

Additionally, if your Amiga has only a limited amount of memory it may be impossible to digitise and display images in anything but low resolution HAM (or even less), simply because of the sheer size of most digitised pictures. Twenty-four bit images can easily take over a megabyte of storage because of the vast amount of colour and detail contained in the average scene.

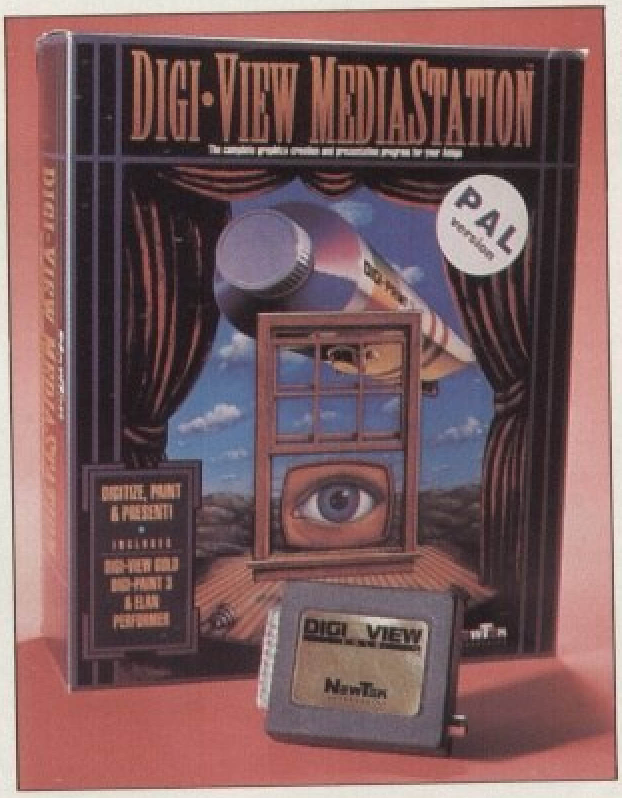
## DigiView Gold

### NewTek

### Distributed by Silica Systems £179.95

The original trail-blazing Amiga digitiser – dating back to the mid-1980s and reputedly developed in a garage – but still capable of producing excellent results.

By current standards DigiView is the tortoise of digitisers, though in terms of both software features and image processing controls it still represents good value.




*MediaStation: a good bundle, but an ageing digitizer*

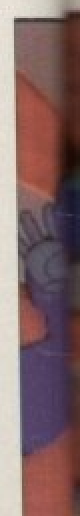
In addition to producing "normal" IFF files, DigiView can save 21-bit RGB files (which are almost as good as 24-bit images) and can also use an enhanced display mode called DynamicHiRes to produce great-looking, though almost completely impractical, grabs.

Many of DigiView's features have since been taken on by other digitisers. It has a full range of colour, brightness, sharpness and contrast controls, three levels of dithering and other goodies such as negative, line art and quick preview modes.

Additionally, though there are several PD and commercial programs which are undoubtedly better suited. DigiView can load 24-bit files and con-







*As you can see, slight quality differences can lead to vastly different results*

## Digitising tips

● If you use a video camera make sure that you use plenty of light (preferably daylight) and that whenever possible you white balance the camera before grabbing.

● If you are using a camera and slow-scan digitiser ensure that your image, your camera and your lighting remain perfectly static during digitising, otherwise the result will be a weird, blurry, psychedelic mess. Breaking the rules can, however, result in some rather artistic results.

● If you are digitising from video use the best quality tape and deck you can lay your hands on and make sure that it has a rock-steady pause. Noise and other glitches will show up in the finished grabs.

vert them to other formats, such as HAM or hi-res – handy if you don't have the proper software or a 24-bit card.

DigiView requires a separate colour splitter, though a set of colour filters are provided. These can be operated automatically with a device called DigiDroid – essentially a stepper motor driven by software which revolves and changes the filter as each colour pass is completed. Some electronic colour splitters are able to automatically interact with DigiView in a similar way.

Interestingly, DigiView was one of the first devices to make use of the ARexx language, which allows any ARexx-capable program to communicate with any other. For instance, Black Belt Software's ImageMaster program can receive digitised images direct from DigiView for processing in 24-bit – a feature which could be very useful for some users.

## DigiTiger II

### Klaus Tute

### No known UK distributor

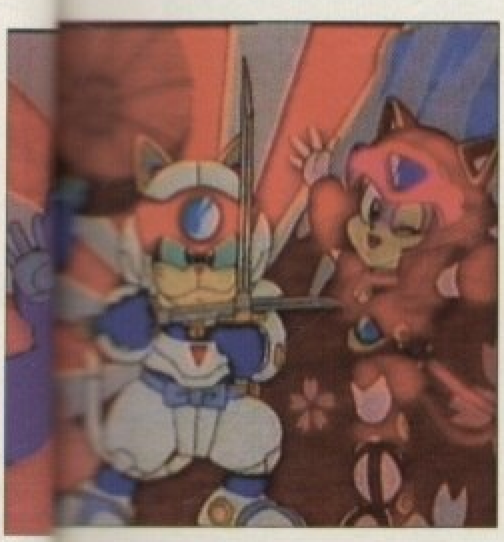
### DM 507 + tax

DigiTiger II is a fast-acting slow-scan digitiser from Germany contained in a largish, tiger-striped box which connects to the Amiga's parallel port and which has its own external power supply, enabling it to work with any model of Amiga.

There are front panel controls for colour, contrast, brightness and sync – a feature which is used to iron out synchronisation problems which may occur with some video decks.

DigiTiger II has a full-screen preview mode which displays a black and white representation of the incoming video directly on the Amiga's monitor, making precise image location simple. After first selecting the desired resolution to grab at, a choice is made for the type of grab – Black and White, Colour Auto, Colour Manual, Antique or Pseudo-Colour.

While mostly self-explanatory, Colour Auto makes use of DigiTiger's internal colour splitter and automatically makes the three colour passes before merging them into a full-colour image. Colour Manual is



*' VLab offers impressive quality at a reasonable price '*

for use with a mono camera and colour filters.

After the image has been grabbed, colour palette, sharpness and RGB balance are chosen and the image is re-rendered accordingly. Up to 4,096 colours are available, depending on resolution, and the palette can be locked to force subsequent scans to use the same colours as previous ones, which is useful if you plan on animating a sequence with Deluxe Paint.

DigiTiger II has no animation grabbing facilities though, so no chance of sequential digitising here – at least not with the software I had.

Sadly, the manual is written entirely in German, but the software is available in English and is quite straightforward to use, so after a few experiments it is possible to get very good results. DigiTiger II is fast and proficient, but I still don't know if anyone has taken it up for retail over here.

## DCTV

### Digital Creations £499

DCTV isn't simply a digitiser – it's a graphics display and manipulation system which just happens to include a digitiser, though it certainly isn't the cheapest way of grabbing images if this is your one and only desire.

One part of the DCTV software is dedicated entirely to digitising and it is very clear and easy to use. By selecting Camera or Tape the software is informed what kind of video source is connected, then its a matter of clicking on the Scan button to see a real-time display of the incoming video. A further click and the image is captured in around ten seconds – since the DCTV digitiser is yet another from the slow scan school of grabbing.

Various speed and quality settings are available if the grab isn't quite right. Once it is, it can be saved as RAW, 24-bit or DCTV display format directly or first have adjustments made to its colour saturation, tint, brightness, contrast, sharpness or RGB levels.

The grabbed image can be further manipulated with DCTV's excellent paint program or processed and output as a "regular" IFF files from the Convert module.

In fact, DCTV provides high quality digitising which really cannot be faulted, though its composite video output isn't exactly scintillating.




*DCTV is a slow grabber, but an excellent all-rounder*

One further point – the special DCTV display format means that images – and animations – can be displayed directly in several million colours on standard monitors with composite video inputs and even played back from "normal" programs such as Deluxe Paint.

The images and animations have to be rendered in the special display format, which is supported by some programs, such as Imagine 2 – a 3D modelling and animation program. For low-cost video work the DCTV is a fair buy, if you can put up with a fairly naff composite video output.

Thanks to Yuri Large at Alternative Image for the loan of his DCTV – they being in short supply at the time of writing.

## VLab

### Macro Systems

### Amiga Centre Scotland

### VLab Par £382

### VLab (Internal) £341

VLab fast-scan digitisers come in two flavours, though both have exactly the same functions. VLab Par is an external version which, like its internal Zorro-slot sibling, offers impressive quality at a reasonable price.

Once again, this is German technology and I was equally impressed by both versions. Speed-wise, VLab Par is the slower of the two as it is connected via the parallel port, rather than directly on the Amiga's buss, but the advantages are that VLab Par can be used with any Amiga (so




*ColourPic Plus is aimed at the professional's pocket*

*DigiTiger II works fast and produces good results*

long as it has at least Workbench 2.0 installed).

Both VLabs use a new format called YUV for initially storing the image after it has been grabbed, though it must then be converted to a displayable format, such as 24-bit IFF, HAM or Ham8.

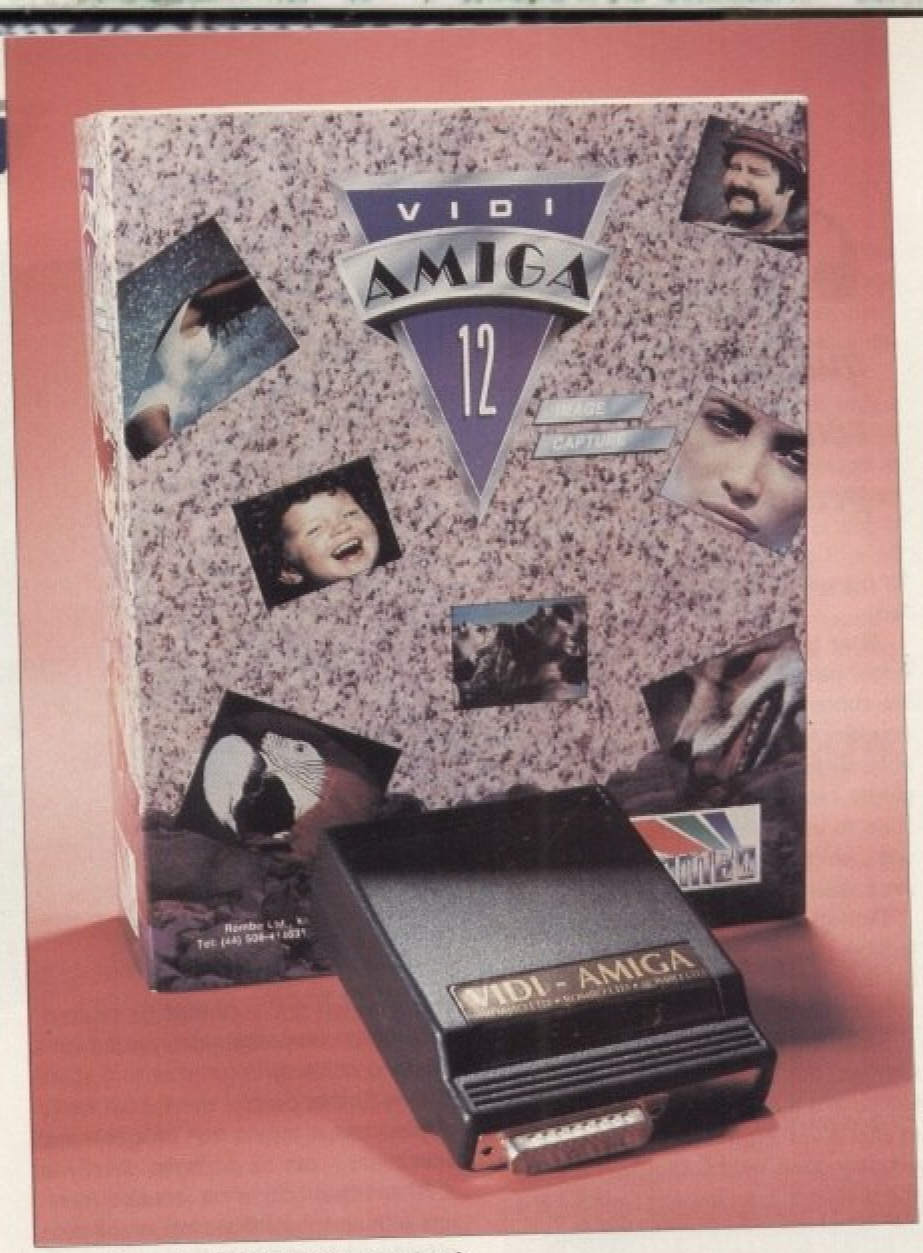
VLab does this through software and the process can take several minutes, especially with hi-res overscan images on non-accelerated machines.

The VLab software is extremely flexible and is quite user-friendly. It's possible to have a mini video-screen showing the incoming pictures in black and white, though the Par version struggles to keep up at times.

Once grabbed you can see a Preview to make sure you got the picture you wanted before converting it, and there are lots of choices for filtering the video signal, adjusting the size of the grab, deinterlacing the picture to remove motion jitters, setting the save format and plenty of ARexx commands.

To top it off, VLab can grab sequences of images – though not every consecutive frame in real time. These could then be converted and made into an animation or used as a basis for retouching or roto-scoping them into a cartoon.

In short, both VLabs are excellent frame-grabbers which can be highly recommended, although a hard drive and accelerated Amiga are needed to get the best out of them. Expect a Y/C version shortly for even better quality and, at long last, an English manual.




*Amiga 12: great value for money and good grabs*

## ColourPic Plus

### JCL Business Systems Limited £699

The ColourPic Plus is undoubtedly the Rolls Royce of Amiga digitisers – with a price tag to match. It features a whole range of hardware connections, with RGB, Y/C and composite video inputs and RGB, composite video and UHF outputs (all of which can be in use simultaneously) and with fast-scanning to boot, ColourPic Plus offers plenty of scope for the creatively-minded.

Physically, this digitiser is by far the largest in this round-up and can sit comfortably beneath a normal Amiga monitor – from where it can be connected to the Amiga's RGB and parallel ports.

There are also external controls provided for adjusting the brightness, contrast, saturation and hue (for NTSC users) of the incoming video signal. Regardless of whether it is in use or not, the ColourPic Plus passes the Amiga's RGB signal through to the monitor, so there's no need to be continually disconnecting it.

Software-wise, the Colourpic Plus is also well provided for. In addition to the standard ColourPic software (which is certainly no slouch) there is the Cabaret Plus program, which contains an extensive range of digitising, animation, image processing and saving functions.

With ColourPic Plus you only need one monitor, as a simple press of the spacebar flips between Amiga and video images – and although only 64,000 colours are used for the video image it is certainly the best quality preview on offer.

Hitting a hotkey freezes an image into the frame buffer before it is downloaded to the Amiga for storage or manipulation. It is also possible to load images into the frame buffer, so letting them be displayed in up to 64,000 colours.

Animation grabbing can be done automatically from video tape, but there are serious limits which require more outlay on extra ColourPic Plus memory.

Without this, it is also impossible to grab in hi-res interlaced overscan (eg 736 x 580), which means optimum quality camera grabs are out of the question.

### Behind the scenes

All the digitised images in this article were produced from VHS videotape from a video deck with good freeze frame capability. In each case the best quality image format in the most colours possible was used and the images were then converted to 320 x 256 24-bit for publication.

For digitisers without integrated colour splitters a Rombo Colour Splitter was used, featuring images digitised from Samurai Pizza Cats ©1991 Saban International N.V and Saban International Services Inc, ©1991 Warner-Tamerlane Publishing Corp. (BMI)

## Vidi-Amiga 12

### Rombo Limited £99.95

The Vidi-Amiga 12 represents terrific value for money and works with any Amiga, though an extra lead is required for connection to some models.

Incredibly, it not only features a composite video input but, for noticeably improved quality, a Y/C one as well. It's also pretty quick on the draw and you might just be fooled into thinking that it is actually a fast scan digitiser when in reality it is a slow scan device.

With its direct-to-your-Amiga-screen black and white preview mode it is easy to see what's happening on your videotape before grabbing an image. Software adjustments are available for colour, contrast and brightness and there is also a hardware brightness control. Colour grabbing is simple thanks to a built-in colour splitter.

Vidi-Amiga12 can also do sequence grabbing, for instance from videotape, but only in black and white (for speed). The resulting grabs can be played back as an animation direct from the software's Carousel feature, which also lets the user edit the current list of images stored in memory – allowing for slideshow-like sequences to be put together.

There is some basic image-processing software on board, though it can only currently be applied to freshly-grabbed images and not to reloaded ones. This may be about to change though, as a revised version of the software is due any time now with significant changes to the Carousel, the addition of full AA graphic mode support and more.

Incidentally, I know that Video Master claims to being the first combined Amiga sound and vision digitiser, but I'm also pretty sure that the Vidi-Amiga 12 was available in the last quarter of 1992 as a version with MegaMix Master built in. Just thought you'd like to know.




*An old soldier which never dies*

## Video Master

### Microdeal £69.95

The good news is that it is a dual-purpose digitiser which can grab both video and audio and it only costs £69.95, which makes it the cheapest such unit on the market, bar none.

The bad news is that Video Master only works with Amiga 500 and 500 Plus models as it is engineered to slot exclusively into the expansion port of these models – though I understand that a version for other Amigas is in the pipeline.

Like DigiView, the Video Master grabber is of the mono, slow-scan, variety and comes complete with a set of colour filters. External controls are available for black level and contrast. The supplied

| MODELS IN REVIEW | HARDWARE | | | | | | | | | | SOFTWARE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type of Digitiser | Integrated Colour Splitter | Amiga Models | Amiga Connectors | Video Connectors | External Controls | Maximum Scan Size | Preview Function | Power Source | Cost (incl. VAT) | Sequence Grabbing Features | Image Processing | ARexx | DOS version required | Memory required | Save Formats | Miscellaneous |
| DIGIVIEW GOLD | Slow | No Filters incl. | All | Parallel | Phono-composite video | None | 768x580 Hi-res 384x580 HAM | No | Amiga | £179.95 (part of Media Station bundle) | No | Some | Yes | 1.2 or greater | 512k+ | IFF, RGB (21-bit) | Package incl. DigiPaint 3 & Elan Performer |
| DCTV | Slow | Yes | All | Parallel & RGB | Phono-composite | Pixel Adjust | 736x566 | Yes – Full screen colour | Amiga | £499 | No | Yes – Extensive 24-bit | No | 1.3 or greater | 1Mb + (3-5 recom.) | IFF, RAW, DCTV, 24-bit | Requires composite video monitor |
| COLOURPIC PLUS | Fast | Yes | All | Parallel & RGB | BNC Composite RGB Y/C | Colour, brightness, contrast, hue | – | Yes – Full screen colour | External mains | £699 | Yes – though limited by on-board RAM | Yes 24-bit | No | – | 2Mb + | IFF, RGB, 24-bit, Targa, CP, AIM | RGB, UHF & composite outputs |
| VIDI AMIGA 12 | Slow | Yes | All | Parallel & disk drive | Phono-composite Y/C | Brightness | 704x566 Hi-res 352x566 HAM | Yes – Full screen mono | Amiga | £99.95 | Yes – Mono only | Some | No | 1.2 or greater | 1Mb + | IFF, HAM E, 256 colour, Ham 8 | Also available with built-in audio sampler |
| VIDEO MASTER | Slow | No Filters incl. | A500/ A500 Plus | Expansion port | Phono-composite | Contrast & black level | 640x512 Hi-res 320x512 HAM | Yes – 1/4 screen | Amiga | £69.95 | Yes – Mono 160x100 pixels only | None | No | 1.2 or greater | 512k + | IFF, RGB, .VID & .FLM | Built-in audio sampler |
| DIGI TIGER II | Slow | Yes | All | Parallel | Phono-composite | Colour, contrast, brightness, sync | 704x560 Hi-res 352x560 HAM | Yes – Full screen | External 12v DC | DM 507 plus taxes | No | Some | No | 1.2 or greater | 512k-1.5Mb + recommended | IFF | – |
| VLAB PAR | Fast | Yes | All | Parallel | Phono-composite (x2) | None | 720x625 | Yes – Small window (mono) | External 12v DC | £382 | Yes – Colour (not 25fps) | Some | Yes | 2.0 or greater | 1Mb + | IFF, YUV, 24-bit | – |

software is very reminiscent of Atari ST programs but runs capably enough and provides a monitoring facility for both sound and vision. Grabs can be made from video, audio or both together, a feature unique to Video Master. Sequences of images can be grabbed at defined rates, including time-lapse, but only in 160 x 100 pixel mono – though full screen stills can be grabbed in sizes of up to 640 x 512 in 16 colours and 320 x 512 in HAM.

Grabbed sequences and stills can be manipulated in the sequence editor to compile presentations from individual "films" and sound can be separately synchronised to action – a feature which no other digitiser has, as far as I know.

Beware that Video Master is something of a memory hog, so if you want to multitask with it you should load any other software you need before running the Video Master software itself.

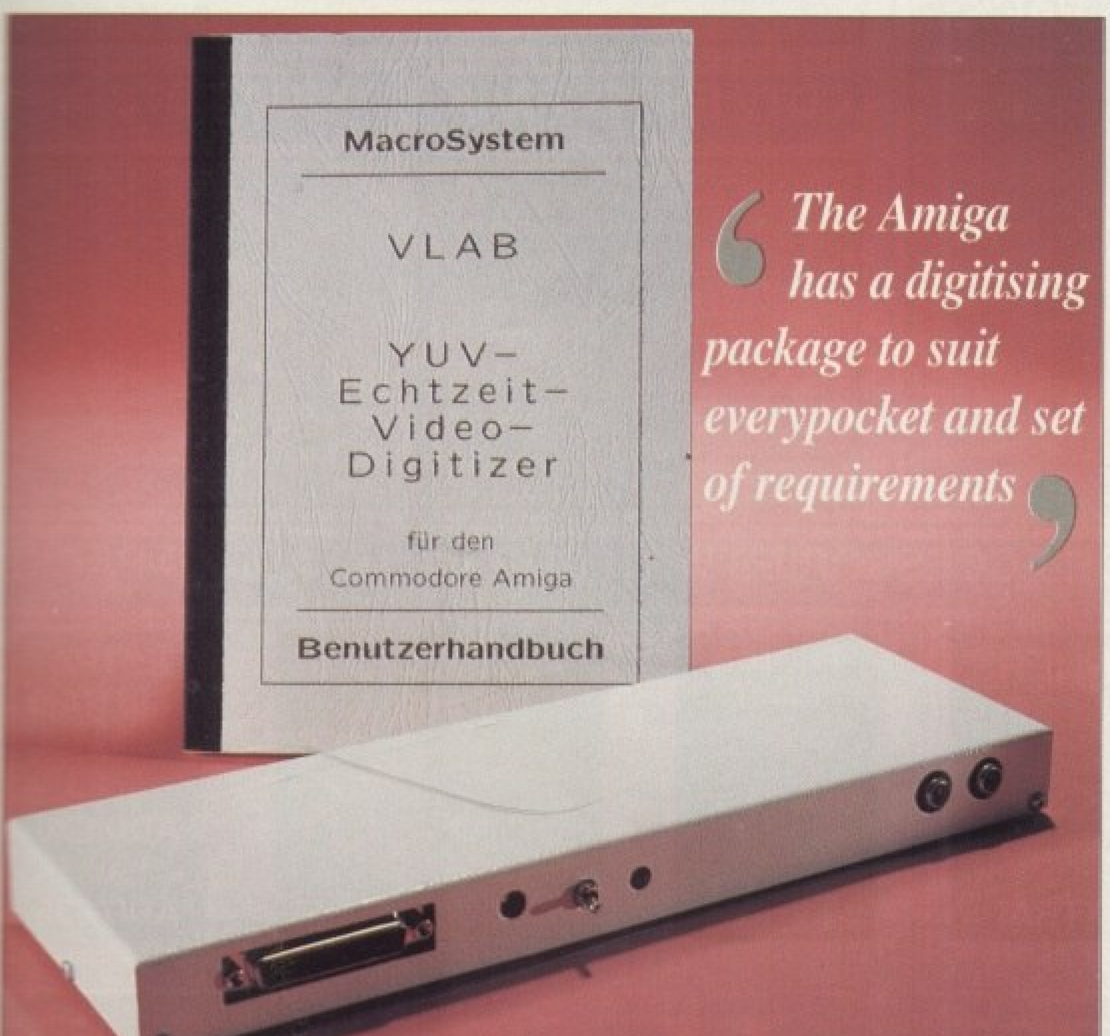
While I can't say that Video Master presents anything special in either picture or sound quality, the combination is certainly intriguing and at this price it should supply many first-time or would-be DTVers with a low-cost platform to get a taste of the action. Some won't like it, but for many Video Master will provide the opportunity to have a lot of fun.

It must be said that this list of digitisers is not exhaustive. Specialised (and sometimes rather expensive) graphics cards such as GVP's Impact Vision 24, G2's VD2001 and one or two others are also capable of frame grabbing – to broadcast quality in some cases.

And in case you're wondering, it's just possible that the frame grabber/genlock for the OpalVision card will be available by the time you read this.

As always, what you choose will depend upon a myriad of factors – how much money you have, what system you use, how professional you wish your results to be...

One thing is for certain, though, and that is that – more so than any other computer – the Amiga has a digitising package to suit every pocket and set of requirements.




*"The Amiga has a digitising package to suit everypocket and set of requirements"*

*VLab, though pricey, is possibly the king of quality*

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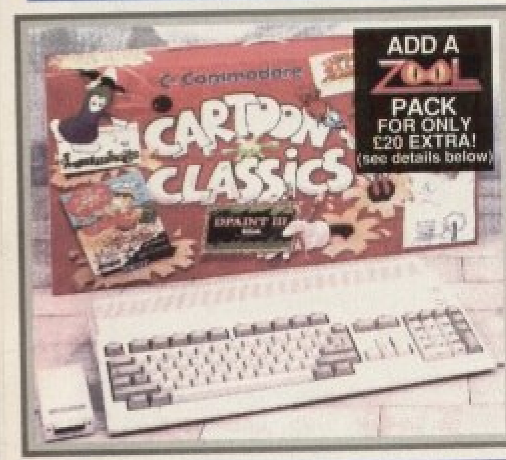
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Paul Austin previews a brand new presentation package that could put the sensational ScalaMM200 on the ropes – or maybe even the canvas!

# MediaLink – the Scala beater?

After the rise and rise of the Scandinavian sensation Scala, the presentation market looked sewn up by what is, without doubt, the slickest package in the business.

Thankfully some serious competition has finally presented itself in the form of MediaLink, a package that takes a dramatically different approach to the art of presentation but nevertheless remains a direct and formidable opponent to its all-conquering Nordic counterpart.

Like the opposition, MediaLink doesn't stop with simple wipes and fades – in fact, in classic Scala style, the package boasts its own version of Scala's EX modules known as Xapps.

The Xapps are in all but name pretty much identical to EXs enabling the addition of CD-ROM, laser discs, ARexx commands, DOS commands, sound modules and samples, animations, CDTV and more.

Aside from employing the abilities of external devices, the package can also add its own touches to the overall effect via its page design section which allows the creation of graphics and text in all Amiga modes, including AGA.

When the pages are complete yet another familiar Scala option makes its appearance in the form of a huge selection of wipes and fades including an excellent variation on Scala's super-impose which effortlessly replaces the existing image in a very video-esque crossfade between two images.

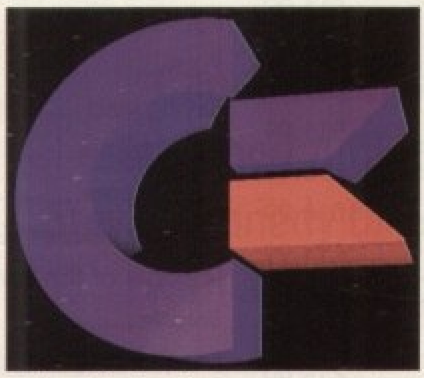
## Impressive

Like its opponent, the number and variety of effects is impressive and again like its counterpart these tricks can be applied to anims and imported graphics with equal skill.

However there does appears one area in which the newcomer may fall short in comparison to the champ. Although special effects can be lavished on complete pages there appears no way to apply them to individual elements within pages – unlike Scala which offers almost as many special effects for text and brush introduction as it does for the pages themselves.

Having had my obligatory whinge it must be stressed that the version presently in my sticky mitts is firmly at the beta stage. Incidentally, I have been assured by Erik Van Eykelen – a top dog at MediaLink Inc – that more work will be going into the text handling prior to release.

Due to the aforementioned "work in progress", I'm afraid we'll all have to wait for next month's *AC* before coming to any definitive conclusions. As you may have guessed we're planning a big splash for the finished package in the next issue – don't miss it if you're serious about multimedia, presentation and quality DTV!



*AGA graphics in action...*

Apart from the expandability of the software via the growing band of Xapps, it also offers the ability to combine elements via directory-style script building complete with loops and parallel events such as music, samples and Xapps all playing their part in the action simultaneously.

Unlike Scala, MediaLink doesn't have a vested interest in the high-end corporate market like Scala's big brother InfoChannel. If you thought ScalaMM200 was expensive, InfoChannel is enough to induce heart failure.

Although InfoChannel does offer a bigger selection of whistles and bells than its Scala sidekick, its primary goal is to offer a centralised network for satellite machines, all of which can be controlled either via comms or direct hardware connections.

Admittedly it does a blinding job in this role; however, even for a small network of satellites with their essential dongles you're literally taking thousands of pounds for the software alone.

The creators of MediaLink have obviously targeted this area of the market as a real money-spinner and as a result every MediaLink comes with its own comms and satellite control elements built-in to the basic package.

In addition the software itself is completely unprotected and shows no sign of the dongle essential to every ScalaMM200 and InfoChannel.

According to Mr Van Eykelen, MediaLink Inc have no qualms about registered users running the package on multiple machines – while employing the software's built-in comms potential as a means of central control with scripts and commands being issued as and when required.

Alas that's all that space will allow, but don't forget that *AC* will bring you an exclusive and dare I say it definitive review in next month's issue. Tune in next time to see if the all-conquering Scala has indeed met its match...

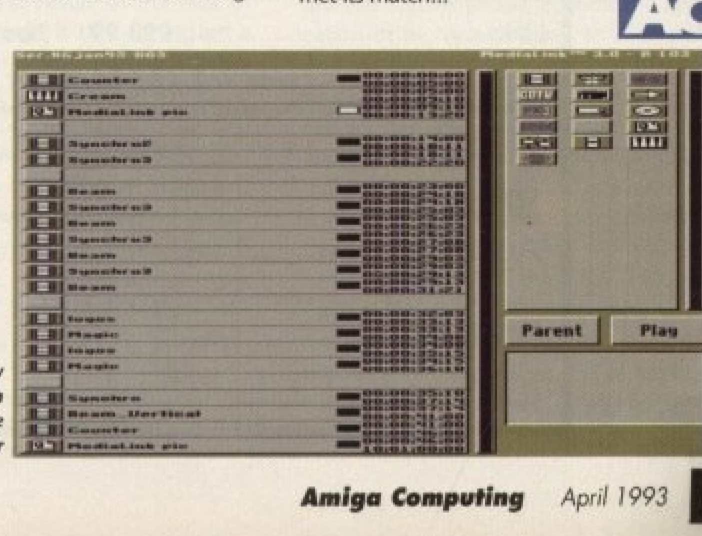
## Choose your level

A particularly well thought-out element of the package is its relation to the user. Unlike many power packages you're not thrown in at the deep end. In fact, thanks to an inspired bit of design, the software can be operated in accordance to the particular needs and experience of the person at the controls.

For example, for the complete novice the "test drive" mode is the ideal starting point allowing even the most technophobic user to create a script via a limited number of Xapps such as the anim player, sample/module player and static picture viewer.

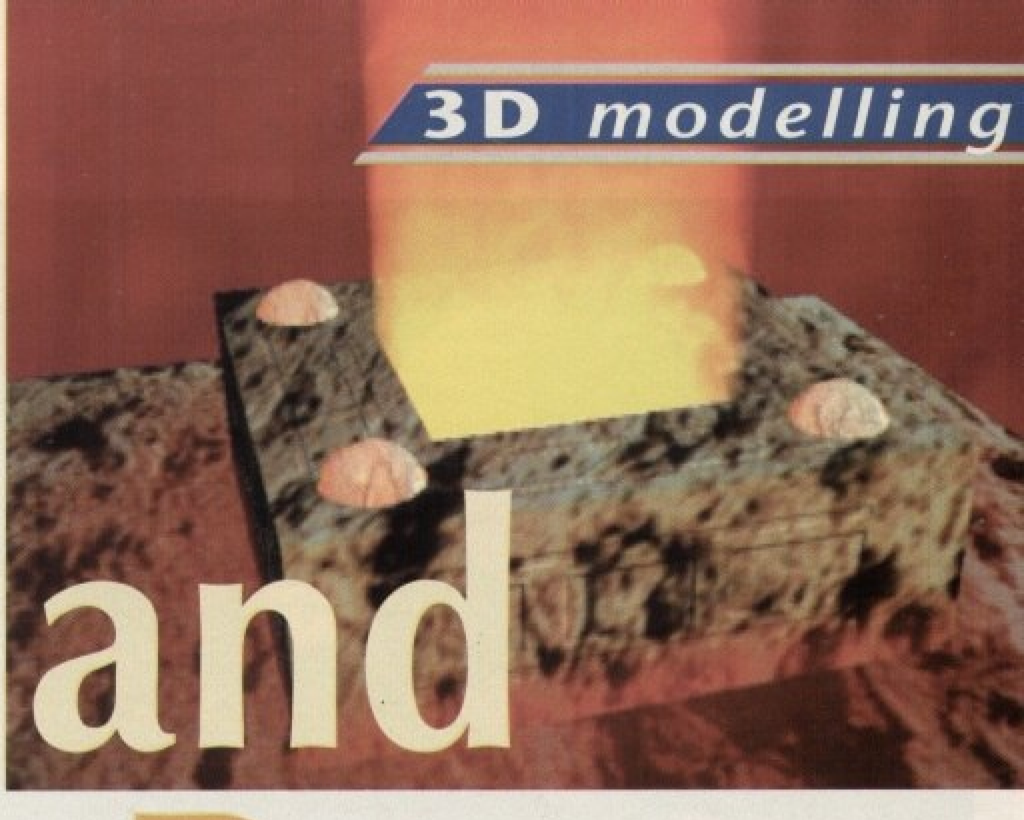
For this basic selection you can still create a pretty impressive show without running the risk of becoming bogged down in the complexities of timecode, external devices and the rest of MediaLink's power features.

Once you've taken your test drive to its logical limits you can step up to presentation, multimedia and finally expert. From this lofty position you can take complete control of every aspect of the show including the software and the machine's potential as a central or satellite remote presentation/ information centre.




*An all new interface which could become very familiar*

# Bump maps and Brasso



## Can Aladdin 4D break into the established Amiga ray tracing market? Stevie Kennedy takes a look at a contender with a few surprises up its sleeve

Ray tracing is the leading edge of Amiga software technology, and the best packages in the field vie with each other to produce effects which wouldn't look out of place in Terminator 2.

Competition is intense, development constant, and with both Real 3D and Imagine about to appear in new versions, and Lightwave continuing to stun the video world in the USA, any new release has its work cut out to make the grade.

Graphics users of the Amiga have come to expect a high level of quality, and many rendered images produced only a short time ago now look dated and inadequate beside those produced using the latest tricks and techniques.

In addition, standards are set to rise again over the next few months as the latest incarnations of the big two hit the high streets, bringing advanced capabilities such as inverse kinematics and spline skeletons to the Amiga world.

Only either a horizon-expanding package or a program with very unique talents can expect to survive in such an environment, but Aladdin 4D from Adspec Programming is actually an evolution of Draw 4D, its name changed presumably to remove any danger of confusion with structured drawing, and as such is not exactly a new product. Luckily, it does have one or two unique talents.

Aladdin 4D takes neither the primitive nor the spline approach to modelling. Real 3D, for example, relies heavily on the use of building block "primitives" such as spheres, cubes, and so on to quickly and easily build the basics before complex point editing is carried out, but Aladdin offers no solid primitives and does not utilise splines.

Only rectangles and arcs can be created automatically, any other shape being constructed using either point editing or tools such as sweep and extrude.

This is rather annoying at first because though primitives are only one tool among many and cannot be relied on for more complex jobs, they are immeasurably useful when beginning a project from scratch and can take some of the drudge out of 3D work.

### Smooth

Users of Imagine and later version of Real 3D will find that spline curves, whether paths along which cameras and objects can smoothly move, or the routes along which simple objects can be extruded to produce complex pipes and so forth, quickly become essential tools.

They make the creation of more natural objects and movements both possible and easy and have become a central part of many an artist's working ways.

With the omission of spline curves and primitives, Aladdin 4D immediately relegates itself to a supporting role as far as most serious 3D artists will be concerned.

Some may find the program's creation process to their liking, but the restrictions placed upon basic object creation are too tight to allow Aladdin to compete with its contemporaries.

Other drawing tools are good, with ample control over rotation, sweeps, extrudes, and so on, and control over the creation space is good. Cameras can be placed at any point and total control of the camera is possible, including multiple targets with their own ins, outs and zooms.

A direct result of the lack of spline paths is that setting up a camera flight path is actually a lot easier than in any other package, even if the finished path is less smooth.

Creating animations is fairly easy, more so probably than in either Real 3D or Imagine, and simple examples are quickly constructed by following the tutorials found in Aladdin's manual.

The downside is that no central control over all animation elements is possible, a consequence of the way in which Aladdin treats all objects.

Every polygon has its own set of attributes, including colour, texture, IFF brushmaps, and even its own individual shading method. However, these are scattered across several very busy requester screens, making control of a simple polygon a lengthy process.

### Power

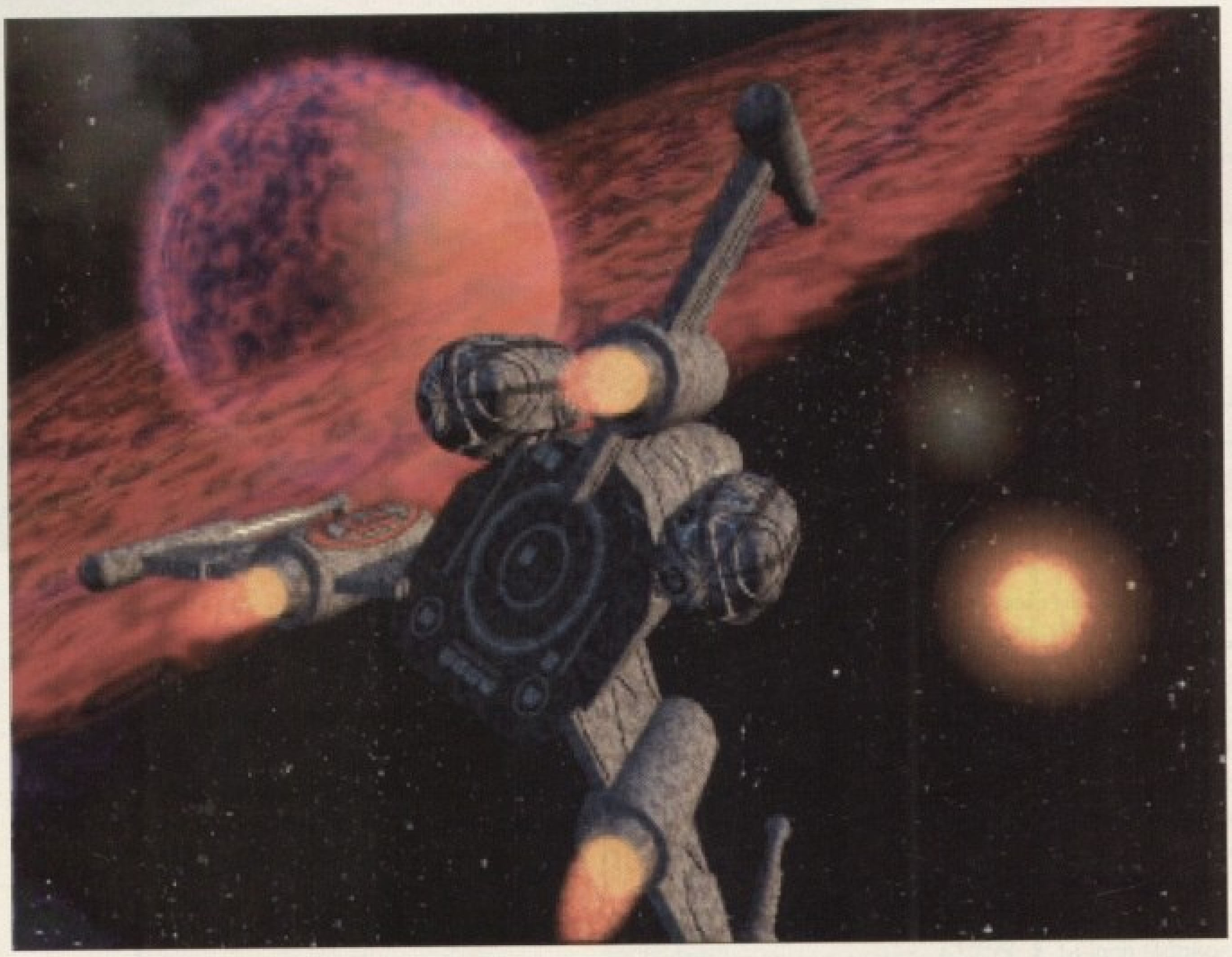
Aladdin offers almost complete control of every aspect of an object, but the user must hunt around to make the most of the package's power.

The textures feature, about which the manual is justly proud, enables the application of multiple textures to each polygon. As everything in Aladdin is tied to a timeline, it is possible to animate each texture, slip smoothly between one and another, and mess about with its individual attributes, giving Aladdin even more control in this respect than offered by Imagine 2.0.

To illustrate this feature, the animation tutorial includes a spinning cube which morphs into a bump map and back, but much more imaginative use of textures can result in realistic ripple patterns ➤



*A combination of brush and altitude mapping makes for a stunning effect*



*Such gas effects are only really possible with Aladdin*

> *Cameras can be placed at any point, and total control is possible*

which change shape and gradually settle down, leopards which really do change their spots, and Klingon spaceships which "de-cloak" complete with gradual fade-in and wobbly bits.

The number of textures which can be used at any time during an animation is limited only to the user's patience and requirements.

Similar attention has been paid to the use of attributes. A requester similar to the textures epic allows for changes in colour, reflectivity, transparency, self-illumination, and much more, all controlled by the usual timeline.

Ease in and ease out values can again be set for each change, and even whether or not an object receives or casts shadows can be set from one frame to the next.

This sort of control is handy where, for example, a general overlight might cause enough shadow to slow down rendering without any real benefit to the image.

## Brighter

Turning off an object's sensitivity to shadows until such time as it is needed, perhaps when a brighter light is turned on half way through an animation, effectively gives the user a choice over which parts of the image will be rendered using scanline techniques and which will render in true ray tracing mode. The latter is much slower, so tight control over how much ray tracing is used comes in very handy.

Other packages will, of course, allow the user to specify whether scanline or ray tracing is used in a global sense, but only Aladdin offers such object-to-object control.

To avoid having the user set up an image like this every time, there are global controls for shadows, phong, and so on in the rendering options requester, so the Aladdin user has the best of both worlds.

Where Aladdin falls down in this respect is that it offers, in a sense, too many options. Now, before you all groan about journalists who are never satisfied, let me explain.

True, many programs are criticised for offering little or no user control over the finished output, and it is a valid criticism levelled at everything from drawing packages to adventure games. However, when a package has a long list of complex features the programmers must make an effort to combine complexity with ease of use.

The way in which Aladdin is structured means that far too many requesters and menu choices must be struggled through in order to make changes. A good example of this is the otherwise superb gas feature.

When a gas object is added to a scene, the user must select it, go to its attributes requester and add some transparency, then turn on the global transparency and phong shading flags. Finally, the objects own shading requester must be summoned so that it can be defined as a phong shaded object.

When one considers that a gas is completely useless without all these options turned on, it would seem the obvious – and helpful – thing to have them all automatically turned on when a gas is added. At the very least, the gas object should surely appear with its own phong shading and transparency settings at a default for a decent gas.

When gases are used, despite the fussy way Aladdin treats them, they are easily the program's most stunning feature and enable the creation of images which one would be hard pressed to match with any other package. What's more, gases are treated in exactly the same way as other polygons, which means they can be animated, morphed, and so on.

## Flexibility

Larger gases, such as effective suns complete with blazing corona or explosions, are just as effective, but the fact that the user can evoke a full range of effects down to candle flames or the flare from starship engines speaks highly of Aladdin's flexibility.

With a little more thought towards putting this flexibility in the hands of the user rather than deep in the bowels of myriad requesters, the program would be much more enjoyable to use.

One niggle about gases is the extremely long time it takes to render them when full image quality is required. A certain amount of time consumption is inescapable due to the complex nature of 3D fractal calculations of this sort, but I can't help thinking that gas rendering times are still way too long.

Waves are treated in a similar manner to gases in that they are effects in their own right rather than textures applied to a single polygon. It is possible to create a wave, either emanating spherically from a central point or progressing linearly across the image, which will affect all objects it encounters.

As each object can have its sensitivity to waves set from within its own attributes requester, the ability to create ripples in liquids while leaving solids unaffected and all with a single wave is again unique to Aladdin 4D.

Waves are applied to an area of space just as gases are simply fractal manipulations of density and colour in a certain

## What a gas!

Rather than treat a gas as an attribute of an existing object, such as the fog attribute used by Imagine or the method of adding fractal textures, Aladdin creates it as a cubic container whose density and internal colour is altered by the transparency and strength of the gas.

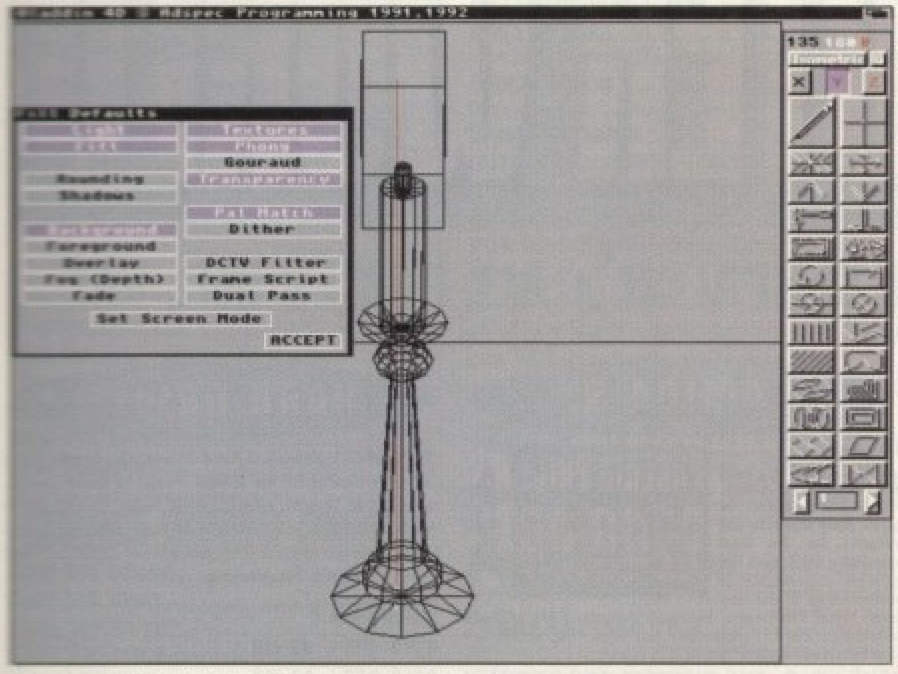
When fractal turbulence is added, which itself can be of varying colour, density, and definition, the number of possible variations becomes infinite.

In addition, gases can be spherical or can seem to emanate from any side of the container, and the container itself can be resized.

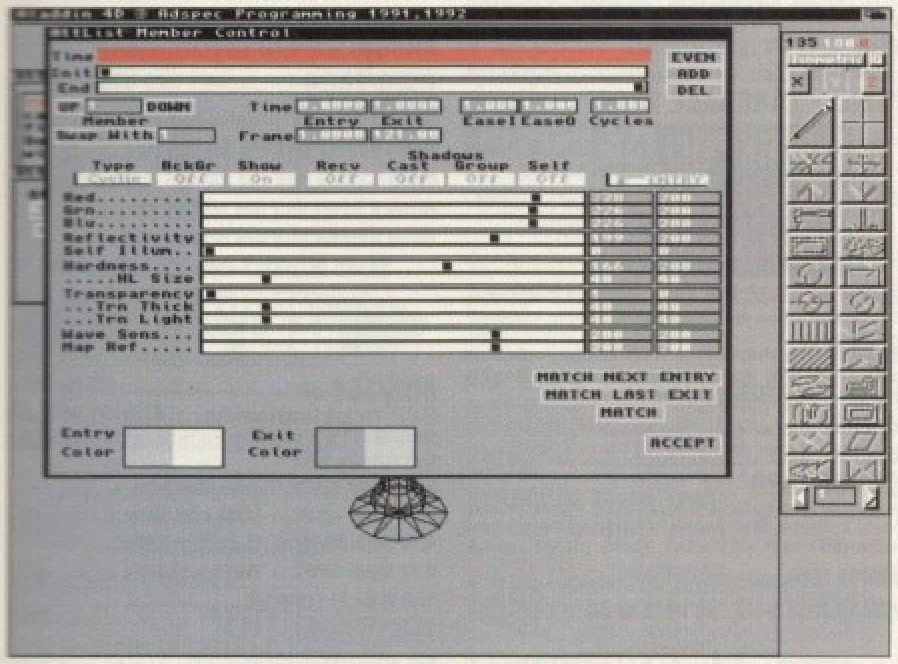
Alternatively, using a bitmap on one side of the container, a density map can be applied which can then be animated to make the gas flicker exactly as the user requires, making possible stunningly realistic candle flames and other effects.

The candle example is simply a matter of settling on a flame-like gas of the correct size and colour, then applying a greyscale brush made of concentric rings of colour from white (dense) in the centre to black on the outer ring.

By animating the brush to make it expand and contract, the candle flame can be made to flicker, an effect which is virtually impossible in any other package.



Screen and render display options are many and varied



Control of attributes gives the user a plethora of options

area, so it is possible to create a gas and then make a wave travel through resulting in some very weird spatially challenged animations.

The spherical wave, which radiates in all three axes at once, is particularly effective in these situations, but a lot of careful tweaking is required if the gas is to show up the wave at all, and this leads to long rendering times.

Ordinary textures, relying on a selection of tiles, waves, and zig-zags are less exciting. The usual Aladdin attention to detail enables their use as anything from cylindrical bump maps to spherical projections, but there is less on offer here than many other packages.

As a general first-line ray tracing package, Aladdin 3D is neither complete nor comprehensive enough to challenge the might of Real 3D or Imagine, and unless updated fairly quickly will be left far behind by the latest releases of these two packages.

However, it offers the best gas effects I've ever seen in an Amiga package and should find an audience among the 3D community, if only as an extra package to produce effects not otherwise possible. For ease of animation and its powerful features, Aladdin 4D could tempt some users, but don't expect to see Activa, Impulse, or Octree shaking in their virtual boots.

AC

**SYSTEM ESSENTIALS**

RED = Essential YELLOW = Recommend

2 Mb RAM

4 Mb RAM

Hard drive

Accelerator

**The bottom line**

Ease-of-use = 6
Implementation = 8
Value-for-money = 7
Overall = 7

Supplier: Micro-PACE UK
Phone: 0753 551888
Price: £259.99

## Jargon buster

**Attributes** Each object in the 3D space has a list of characteristics, such as colour, hardness and so on, which define its basic appearance. Collectively, these are referred to as the object's attributes.

**Bump map** A special kind of texture, bump mapping is a mathematical method of creating disturbance on a smooth surface to give it a less perfect appearance. Very over-used since its inception, bump mapping is nevertheless a very handy effect if used sparingly.

**Extrusion** By extruding a circle, one can make a cylinder, or by extruding a square, a cube is born. Extrusion simply adds depth to a 3D image, but can be very useful if a program enables the extrusion of a cross section down a pathway, which can save a great deal of time when creating objects such as pipes of a complex shape or walls which bend round a corner.

**Gases** Because of their hazy and imprecise nature, these are very difficult to reproduce using ray tracing packages. The only successful way to create them is using fractal mathematics, which means the user can often spend ages rendering them and tweaking them to get the right result.

**Inverse kinematics** A hot new jargon phrase which is applied to the technique whereby natural movements are recreated in 3D. By creating joints with their own movement restrictions and so on, the use of inverse kinematics makes possible the creation of, say, a human arm which actually moves like the real thing.

**Mapping** Generally speaking, mapping applies to any technique whereby an effect is mathematically applied to a virtual surface. This includes brush mapping, bump mapping, altitude mapping, and so on and includes a wide range of techniques and effects.

**Organic modelling** The better ray tracers offer organic modelling, which is a technique for creating more realistic looking human faces, animals, cars, or anything which had soft, sweeping lines. There are many ways in which organic modelling can be accomplished, but generally speaking it involves giving the computer an outline of how the object is supposed to appear, then telling it to add a smooth outer surface or "skin".

**Paths** A path is a route in 3D space down which an object or a camera can be told to move. The advantage of paths is that the user can set out a complete movement for animation with just one action rather than have to tell the computer where the object will be in every frame. The more control a user has over paths and their creation, the better.

**Point editing** Creating polygons and manipulating them is all very well, but for really detailed work, point editing is the only way. It involves editing the individual points in a polygon by adding or deleting them, moving them, or scaling/rotating small areas of a polygon.

**Primitives** These are just primitive objects such as spheres, cubes, cones and so on, which many programs will create automatically to save the user the bother of creating such basic shapes time after time. Relying too heavily on them is a mistake, but they do help speed up the creation process.

**Scanline** A ray tracing method which cuts down rendering time by ignoring the effects of one object on another and just rendering the colour of the objects. See tracing.

**Shading** Methods vary from wireframe (no shading) through colour shade (simple polygon shading for previews) to gouraud (pseudo ray-traced) and the ultimate phong shading. The latter is a mathematical method for calculating all smooth curves and leads to the most realistic images.

**Spline curves** Curves which are defined by their axes and a mathematical equation, splines can be any shape or size and are always smooth. They thus make excellent paths for objects and cameras.

**Sweep** One of the most common drawing tools, sweep enables the creation of a cross-section of an object which is then swept round in any angle up to 360 degrees to form a solid object. Similar to the lathe technique, sweep is ideal for chair legs, beer glasses, and any other round symmetrical object.

**Texture** A texture is any effect which is applied to a surface in order to change the colour or appearance of that subject. Textures can be mathematical (such as bump maps) or based on existing IFF images (such as brush mapping). In addition, a texture can be as simple as a dot pattern or the by now famous black and white tiles.

**Tracing** The most maths-intensive and time-consuming method, tracing renders an image by tracking the light itself, following it through glass objects, casting shadows on walls, and reflecting objects in each other. Traced images take much longer to render than scanline images, but in certain circumstances – such as those involving glass or chrome – they are of far higher quality.

# HiSoft BASIC

## PART 2

### Paul Overaa continues his lucid introduction to this powerful programming language

In addition to the string constants and string variables mentioned last month, HiSoft Basic allows both integer (whole number) and floating point (fractional numbers represented in decimal form) to be used.

One way to indicate the type of a numeric variable is to place a trailing identification character after the variable's name with per cent (%), ampersand (&), exclamation mark (!) and hash (#) signs being used to represent 16-bit integers, 32-bit integers, single precision floating point and double precision floating point numbers respectively.

If, for example, you wish to declare a 16-bit integer variable, initialise it to the value 32,000 and then print its contents, you could do it like this:

```
user_number%=32000
PRINT user_number%
```

The use of an explicit type identifier, such as %, is useful in that it reminds you of the purpose of a variable, but many feel that the code becomes slightly harder to read.

To avoid this HiSoft and many other Basics provide statements that allow you to pre-define the types of variables beginning with particular letters. One alternative way of writing the previous example would be:

```
DEFINT u
user_number=32000
PRINT user_number
```

Type declarations based on #, %, &, ! and $ can override a general DEFtype statement and so many programmers will use DEFINT a-z near the start of their programs to ensure that all variables whose types have not been explicitly declared, will be set up as 16-bit integers (because these Basic numbers use the smallest amount of space).

As well as decimal numbers, HiSoft Basic lets you set up variables using binary, octal or hexadecimal constants. All you need to do is prefix the number concerned with &B, &O, &H but obviously the number must be meaningful for the chosen base.

Programmers frequently use additional numbering systems but since binary and hexadecimal are the most important I'll restrict my comments to these only.

In the decimal number system, ten different symbols (the digits 0 to 9 inclusive) are used to represent numbers. Each digit in a number is ten times more significant than the digit to its right, and ten times less significant than the digit to its left.

This "ten times" relationship that exists between the digits of all decimal numbers is obviously a fundamental part of the decimal numbering system – if, for example, we consider the number 275 and write a full description of what each digit means we can see that it is just a convenient way of expressing this sum:

```
(2 x 100) + (7 x 10) + 5
```

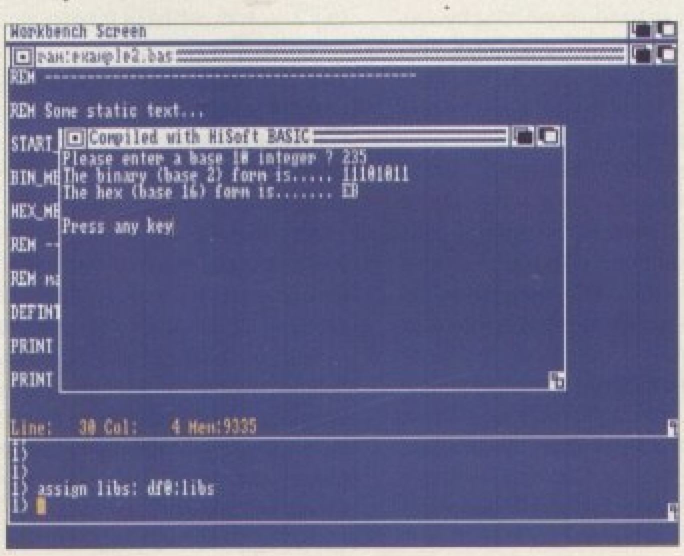
Going one better than this and, bearing in mind that any number raised to the power zero is unity, you can express each effective digit term as a product of one digit and a power of ten like this:

```
        2         1         0
2 X 10  +  7 X 10  +  5 X 10
```

For decimal numbers, ten is known as the radix, or base, of the numbering system but many other bases are possible. Computers use binary, ie base 2, numbers which consist of strings of 0s and 1s and again if you think of a binary number in terms of its explicit radix = 2 representation it's easy to see the relationship between the binary and decimal number systems:

```
                 3     2     1     0
1011binary=1x2+0x2+1x2+1x2

           8 + 0 + 2 + 1=11decimal
```




*HiSoft Basic defining a variable*

Computers use binary numbers internally because the two digits 0 and 1 relate directly to the possible states of bits within the memory hardware of most computer systems. Binary numbers are then intimately involved with a great many computing applications but, since they are not that easy for us humans to work with (because long strings of 0s and 1s are easily mis-interpreted) a related radix scheme called hexadecimal is often used as an alternative.

Hexadecimal numbers use a radix of 16 and the 16 symbols used are the digits 0 to 9 plus the letters A to F. Each column in a base 16 number therefore represents some power of the base. For example the decimal number 16 itself is written as 10 hex, because:

```
                 1         0
10 hex = 1 x 16  +  0 x 16

           16    +  0        = 16 decimal
```

Similarly 1F hex would be:

```
                 1          0
10 hex = 1 x 16  +  15 x 16

           16    +  15       = 31 decimal
```

The fact that the bases of the binary and hexadecimal numbering systems are power related (two to the power of four equals 16) produces a special, and very useful, relationship between these two numbering systems – it allows one hexadecimal digit to represent four binary digits.

Best of all the binary to hex conversion process is very easy to understand once you've learned the relations shown in Table 1.

Now let's try a couple of conversions using the HiSoft Basic-style notation. To convert a hexadecimal number into binary form you just replace each hexadecimal digit with its group of four binary digits so, to convert a binary number to its hex form, you peel off (from right to left) groups of four bits and replace them with the corresponding hex digit.

| Binary | Hex |
|---|---|
| 0000 | 0 |
| 0001 | 1 |
| 0010 | 2 |
| 0011 | 3 |
| 0100 | 4 |
| 0101 | 5 |
| 0110 | 6 |
| 0111 | 7 |
| 1000 | 8 |
| 1001 | 9 |
| 1010 | A |
| 1011 | B |
| 1100 | C |
| 1101 | D |
| 1110 | E |
| 1111 | F |

***Table 1: Binary and hex conversions are easy once you've learned this table***

To convert &HCF to the binary equivalent you'd replace each of the two hexadecimal symbols with the binary equivalents like this:

```
HCF   =   C      F

          1100   1111      = &B11001111
```

To go the other way you take groups of four bits from the binary number and replace then with the corresponding hex digits. The binary number 1111000010101010, for example, could be translated to hexadecimal form as follows:

```
&B1111000010101010 = 1111 0000  1010 1010x
                        F    0     A    A
                                 =  &HF0AA
```

Using – and converting between – binary, hex and decimal number systems is not that difficult but it does take practice.

AC

## Taking the easy way out

**If all this number conversion stuff seems like hard work you'll be pleased to know that as well as being able to define constants in various bases HiSoft Basic also provides functions that can automatically translate a number into binary, octal, or hexadecimal forms.**

**The functions Bin$, Oct$ and Hex$ are dead easy to use because you just have to place the value to be converted in brackets after the function name.**

**This value is actually known as a parameter or argument of the function and I'll have more to say about these in the next instalment.**

# Music on a shoestring

**You don't need a stash of cash to write serious music on the Amiga. Phil Morse shows you how to develop music with out the financial headache**



You might well believe that making music on your Amiga is a costly and difficult process. Well, if you buy a synthesizer, sound modules, multi-effects units, a portastudio, a sampler, an SMPTE timecode generator and a decent set of commercial software, it is – very.

But you can make stunning music for next to nothing, and learn a lot more about song construction, sampling, sound balance and all the other skills that no amount of money can buy you, with a no-frills set-up, as I am about to describe in this article.

And before you decide that any music made on a basic Amiga will be tacky to some degree, a certain dance band have recorded song after song using just two Amigas, set up in a very simple way – and if such songs can hike up the top ten as theirs have, then the Amiga is most definitely here to stay.

## Amiga vs ST

For many, the Amiga is not the obvious choice for a music computer anyway, let alone one to attempt to make music on for a pittance. "Buy an ST!" they'll cry, "It's got a built-in Midi interface, and everyone who's into music uses the ST!"

Luckily for Amiga owners, this commonly-held misbelief – that the ST is the only music computer worth considering – doesn't stand up when you consider the facts. Barring the Amiga's lack of a Midi interface there is nothing that the ST can do that the Amiga can't do – better.

The Amiga can multitask (meaning you can switch between music programs already present in memory) and has far superior internal sound (a boon to the shoestring user who can immediately start to make music without any extra equipment at all). Less obviously but equally importantly, the Amiga's underdog position in the music world (the "ST is better" myth has fooled many) means that there is much cheap support from enthusiasts, rather than commercially priced support from large companies – all of which adds up in your favour should you be considering taking control of your Amiga's sound potential. Your first step into the music world will require very little extra hardware. This is because the Amiga has four channels of sound already built in to it.

This means that it can play four separate sounds at the same time. It is subject to certain limitations – the sounds are recorded in "eight-bit", which translated means that the quality is pretty good, but not CD quality.

A standard A500, A500 Plus or A600 will do for the computer itself. The more memory the better, and a hard drive would be nice, but I use an A600 with one floppy drive (the one built in) and the standard 1Mb of memory, and I do quite

## The essential guide to what to buy

There is not enough room here to cover all the cheap music software available for your Amiga – the Amiga's library might not have reached ST proportions yet, but it's certainly pretty large.

Instead, I have chosen a couple of good examples of each type of software covered, and detailed major features along with the price (if not PD). The box at the end of the article gives addresses of suppliers.

### Trackers/sequencers

At this price level, and to control just your Amiga's internal sound, you're best off buying a tracker. Sequencers tend to be designed with Midi in mind – a system for controlling external musical instruments beyond the scope and brief of this article.

However, if you plan to expand to a Midi setup later, by all means buy a Midi-compatible sequencer, because nearly all also control the Amiga's internal sounds, and can load and save samples.

Probably the most famous tracker is Teijo Kinunnen's OctaMED. Distributed by Amiganuts, you can get a PD version – v1 – or alternatively the much-improved and highly recommended OctaMED Pro, which has only recently been released, but costs £30 with the manual. To buy it without the manual costs £22, but unless you are an experienced user the manual is a good idea, as the documentation that comes with it on-disk concerns itself more with the program's new features and history than how to use it.

OctaMED is famous because it uses an ingenious channel-sharing method to simulate eight channels of sound. This takes a lot of memory, and to use all eight channels to their full will require you to expand your Amiga by several megabytes, not to mention the near-essential purchase of a hard drive to store all of your samples on.

But the capacity is there, and if you were to buy OctaMED Pro it's unlikely that you'd outgrow it.

Provided on the disk as well as the program itself is a player, which is used to play any songs you've written, independently of the main program. This can be freely distributed by you along with your songs, so you can release your tunes into the PD and provide the means to play them without gaining permission from or paying anyone.

Also on the disk are demo songs and samples to show what OctaMED is capable of, although I have to add that I've heard far better MED songs than the demos provided!

It's not the most intuitive program, and it looks and feels cluttered until you've worked your way around all of its various features, but once you're used to it it'll present few problems.

All in all, if you an afford the £30, OctaMED Pro is a very worthwhile investment. If you can't, consider getting v1, which is available from most major PD libraries for very little indeed.

Alternatively, try SoundTracker, which is currently up to v2.6, and available from major PD libraries. Another famous tracker which has been constantly upgraded and is now almost unrecognisable from the first version released many years ago, SoundTracker is a very competent, bread-and-butter, four-channel tracker, and one which is used all over the world, just like OctaMED.

Also like OctaMED, there are many song modules available for it, and it comes with full on-disk documentation detailing all of its features and providing you with plenty of information to get started.

Both of these programs can save and load files from disk, use various sample formats and have enough universality about them to ensure that you won't find yourself incompatible with the rest of the world having purchased one or the other. Take your pick – you won't go far wrong with either.

nicely, thank you very much. Sticking with basic equipment has the added advantage that, should you ever choose to release any of your compositions into the public domain, the largest possible number of Amiga owners will be able to access your work.

As far as software goes, you need at the offset a tracker or sequencer program. Both do the same job – play back sounds in the order you wish them to be played back in. Think of them as programs which can remember what you've played and play it back to order.

The flexibility comes in the fact that you can tell the computer in what's called "step time" what to do. This means that you can take an hour telling it to play three notes if you wish, and it will play them back in a second. In other words, a computer removes the need to be able to actually play music in real time.

## Easier

Incidentally, trackers started out as rather technical, number-oriented programs (although they have become rather easier to use in recent times), and originated primarily for the use of programmers.

A sequencer is a program which does the same job, but is designed for the use of musicians first and foremost. As explained later, you'll probably start off using a tracker.

As well as a program to play your sounds, you also need to get the sounds themselves! There are literally a limitless number available in the public domain, which means that you have access to a huge and ever-growing library of instruments at a cost of next to nothing.

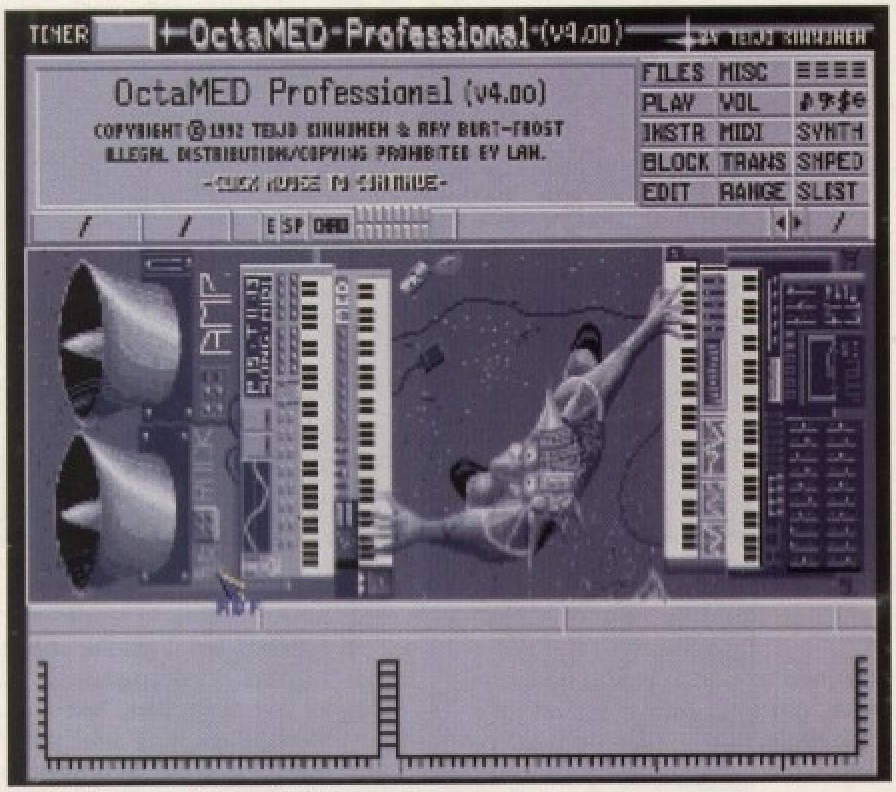
It is also very worthwhile investing in a sampler. A sampler is a combined hardware/software package which gives you the ability to play sounds into your Amiga from any source (microphone, CD player, tape, even TV and video), mess around with them, save them to floppy disk and the use them like the sounds purchasable ready-recorded. This gives you a huge degree of flexibility and is something musicians even ten years ago would have paid dearly for.

You can get PD samplers, but as a piece of hardware is needed, and as they're really pretty cheap anyway, it's worth buying a commercial one.

You need something to listen to your music on, and there are a number of options available here. To start with, there's nothing to stop you playing your music through your TV or monitor, just as you currently listen to Amiga sound in this way.

In recording studios, they have tinny, crackly speakers set up just so that they can hear what the music they're spending thousands recording will sound like on really cheap equipment!

But they also have high quality monitoring, and if you take your music (and your ears) even half-seriously, you should consider plugging your Amiga's sound output into your stereo system or a good-sounding portable. In this way, you'll hear a far truer representation of your music than the speakers in your monitor/TV can even hope to give you. You also give yourself the ability to tape onto cassette anything you compose – great for demos.




*OctaMED is now even better with its Pro moniker*



*A page from the AM/FM mag*

I mentioned earlier that the Amiga's four internal sound channels are subject to certain limitations. One of those limitations is the fact that two channels play through the left-hand speaker (the white socket marked L AUDIO on the back of your machine) and two play through the right-hand speaker (the red socket marked R AUDIO).

This means that when playing music back through a decent hi-fi with speakers set apart, the effect will be rather like those early stereo records from the 60s, where the guitars were all on the left and the drums all on the right.

Although sometimes useful – games programmers have learned how to make convincing missiles whoosh from left to right, for instance – this is on the whole an extremely off-putting "feature". If you're playing a piano, you don't want it to just come out of just one speaker or the other.

The solution – and one which, due to the incredible flexibility of the purchase, you'll never regret – is to buy a small mixer. A mixer is a hardware device ➤

## Sample disks

Sample disks are what they sound like – disks containing sets of sampled instruments for you to load into your tracker and use to put together songs.

There are hundreds upon hundreds of sample disks available, from the most basic sounds (drums, pianos and so on) to the most exotic instruments to sounds so contrived they could not possibly have come from any instrument in existence! You can also get vocal samples, which – although never very long – are great when creating dance music for adding catches and hooks.

For instances, Strictly PD's House Samples disk (U287) provides the basic noises, drum loops (a piece of drum track recorded for you to loop in order to create a complete drum line) and samples for dance music.

The acclaimed *AM/FM* disk magazine has a themed disk of samples every issue – for example, a complete set of samples "borrowed" from the Roland 707, or a top Kawai synth, or a set entitled "horror samples".

If you look hard enough, you can normally find sets of disks containing most of the samples from new synthesizers very shortly after they are released.

Although only eight-bit and not a patch on owning the synthesizer, they're still more than worth having! Sector 16 Software also provide a wide range of high quality samples – address at the end.

Amiganut's PD Sample Set is up to disk eight, and contains everything from electric guitars and cars skidding to the very best acid basslines and even orchestral instruments such as bassoons and pianos. A worthwhile set to own, and it'll cost you very little indeed.

## Samplers and sample processors

Here it is best to avoid the public domain, and to go for one of the cheaper commercial packages. Microdeal are a good name for value-for-money software, and their AMAS II hardware/software package is well worth a look.

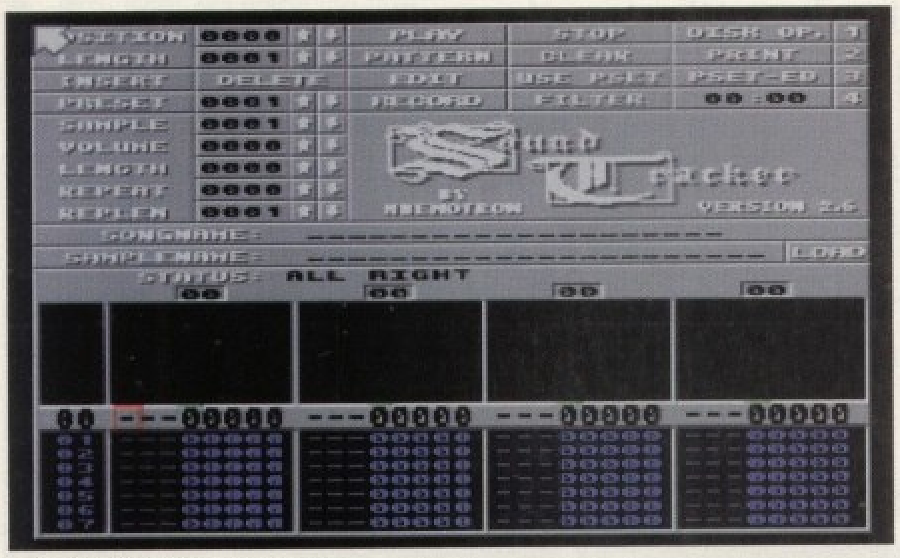
Retailing at £99.95, AMAS II comes in two parts. First is a highly useful wedge-shaped box with two ribbon connectors attached for your parallel and serial ports.

This is a versatile little box, because it can not only accept inputs from an the usual twin-phono plugs (for sampling in stereo from a CD player, for instance) but also from 1/8in jack plugs – like those found on personal stereos and some portable tape players. You can also plug a small microphone in here to sample voices! If this is not enough, the box is also a Midi interface – meaning that should you wish to expand your system in the future, there'll be no need to buy a separate Midi interface. Even if Midi is not up your street, this box gives you the ability to plug in a "master keyboard".

You might find yourself getting peeved at having to play music on a keyboard as musically artificial as the Amiga's, and a master keyboard – a set of keys in a box, basically – gives you a professional keyboard which you can plug in and use to play your Amiga's sound with.

AMAS II's software is a bit gimmicky and flashy for my good, but it does the job and admittedly looks very pretty. You can mess around endlessly with samples, in either mono or stereo, and save them out to disk in a number of formats, so there will be one to match your chosen tracker.

Good as it is, AMAS II isn't the cheapest on the market, and if you don't need the Midi capabilities of the hardware, look out for cheaper packages such as City Beat's Beat Studio, which comes with simpler hardware and a correspondingly cheaper price tag. Or look at Microdeal's Stereo Master, which comes with a cut-down cartridge and costs less than £40.



*SoundTracker's main working screen*

designed to take a number of sound inputs, give you control over them (on a basic model, usually just volume) and re-output them mixed together as either mono or stereo output.

By a little ingenious wiring, you can mix your Amiga's output so that the left and right speakers can carry both sound channels, to any volume level you desire, thus imitating a true stereo effect, rather than the all-or-nothing offered by the standard Amiga minus extra hardware – see the box "Realistic mixing" for more details.

## Cheap

Diagram 1 shows in detail how to plug this hardware into your Amiga. You'll notice from the diagram that various leads and connectors are specified – these can be bought very cheaply from any electrical retailers such as Tandy, or if you're a dab-hand with a soldering iron and want to save even more money, you could make them yourself.

So, you've got your system set up – what now? Start by reading your tracker, sampler and Amiga (sound chapters) manuals, and taking as active a part in them as you can – load the demos, and don't be scared to press buttons and mess around.

Above all, don't feel dwarfed by a lack of formal musical training – music is an art, not a science, and if you like what it sounds like, that's all that counts.

Do your own thing, learn, have fun... And when you've got some tunes you're truly proud of, why not send them to *Amiga Computing* for the CoverDisk? Get one tune accepted and your purchases will have paid for themselves...

## Product availability

OctaMED and the PD sample set are available from Amiganuts, 169 Dale Valley Road, Southampton SO1 6QX.

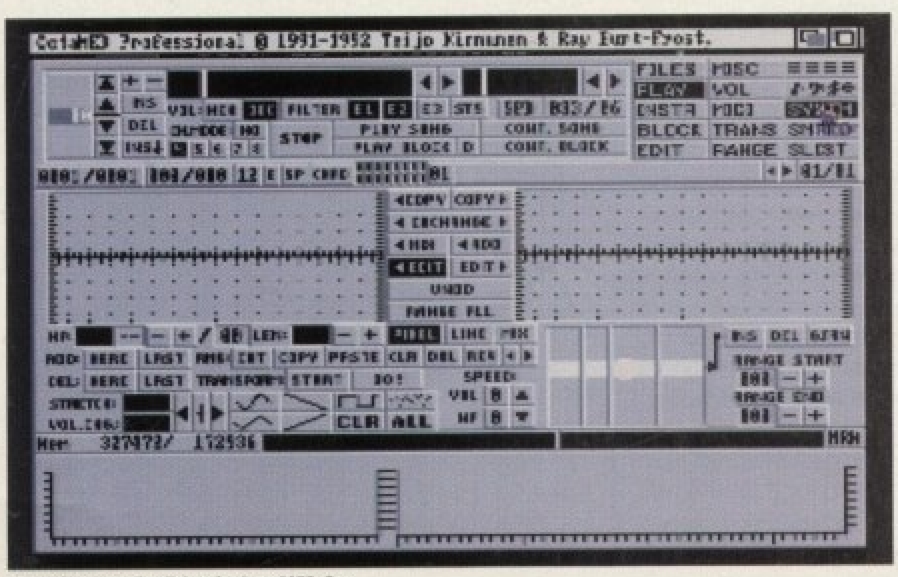
Soundtracker is available from South Lincs PD, and most good PD libraries

AM/FM disk magazine/samples is available from 17 Bit, 2/8 Market Street, Wakefield WF1 1DH and most good PD libraries

The House Samples disk is available from Strictly PD, 11 York Place, Bristol BS1 5UT or most good PD libraries

Music and Midiware (samples) are available from Sector 16, 160 Hollow Way, Cowley, Oxford

AMAS II is available from Microdeal at PO Box 68, St Austell PL25 4YB.



*Complex sound editing in OctaMED Pro*

## Realistic mixing

As mentioned, a small mixer is really a very worthwhile investment – from the offset it will give you a huge degree of control over the balance and volume of your sound output, and will become more useful as you discover more ways of setting it up, more things to plug into it, more things to plug it into – not to mention revolutionising sound on games and other programs too.

By far the most popular small mixer on the market, and one which crops up everywhere from bedrooms to mixing microphones on-stage to professional studios, is the smallest model available from the Tandy chain of stores, monikered with the brand name Realistic.

This little beauty retails at not much more than £20, and has four channels in and two out (for the twin inputs on your stereo or portable), and absolutely no frills.

Diagram 1 shows how to set up such a mixer to bypass the problems of your sound channels being separated when they emerge from the Amiga.

You'll need two single phono to double mono quarter-inch jack leads, which you may need to make yourself, although by using adaptors, standard leads can be made up to this specification for a few pounds extra. Your local electrical/audio retailer should be able to advise.

### Volume

These leads plug from the L- and R-AUDIO sockets on your Amiga into the inputs shown on the diagram. You then plug two single phono to single quarter-inch jack leads from the L and R outputs on the mixer to the AUX, VIDEO, CD or TAPE 2 input on your hi-fi/portable, and your wiring is complete.

The reason you should use the quarter-inch jack sockets on the mixer instead of the apparently simpler phono inputs is because the jack sockets provide a higher output volume – in practice you'd find the output from the phono, or line, inputs too quiet to hear or record properly.

The mixer takes a single nine-volt battery which slots into a compartment on its underside, and you must remember to turn it off when you've finished using it – do this and the battery should last for months.

In use, you now have two options. Set the switch on the mixer to STEREO and the first two faders decide how much of your Amiga's L-AUDIO output (two of your channels) goes to the left and right-hand speakers respectively, the next two faders doing the same for the R-AUDIO output. So you effectively have as much control as is possible over the balance and volume of your machine's sound output.

Should you wish your output to be sent equally to both speakers, select MONO on the mixer and adjust the faders to your desired volume levels.

Incidentally , while set to MONO you don't need to plug each Amiga channel into two mixer channels – one will do, which frees two mixer channels to allow you to mix anything you wish with your Amiga's output. Now you can play along with favourite tapes or CDs!

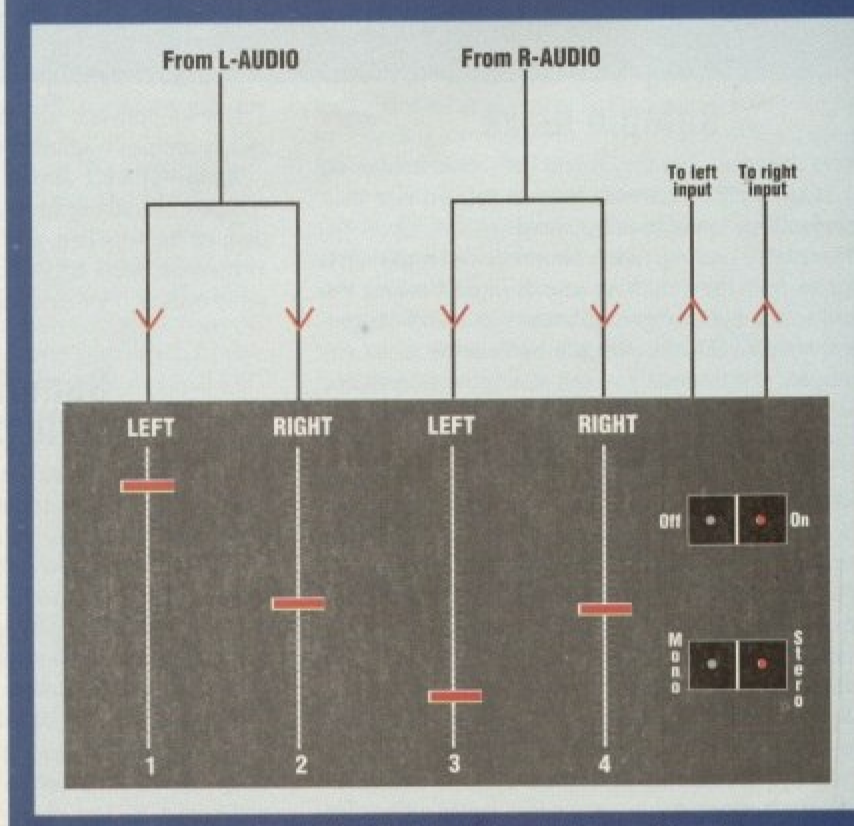



*Diagram 1: Wiring in a mixer to blend the Amiga's left and right sound channels*

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## PLUG-IN HARD DRIVE AMIGA 500/500PLUS

The **A500-HD8+** provides the ultimate in hard disk performance, memory expansion and future expandability for the Amiga 500. It incorporates the same VLSI custom chip and FAAAST ROM SCSI driver which are used in GVP's Series II SCSI/RAM controllers for the A1500/2000. As a result the **A500-HD8+** offers unbeatable hard disk performance. The easy-access Autoboot/Game Switch allows the hard disk to be disabled, ensuring compatibility with the few games that will not work with a hard disk.

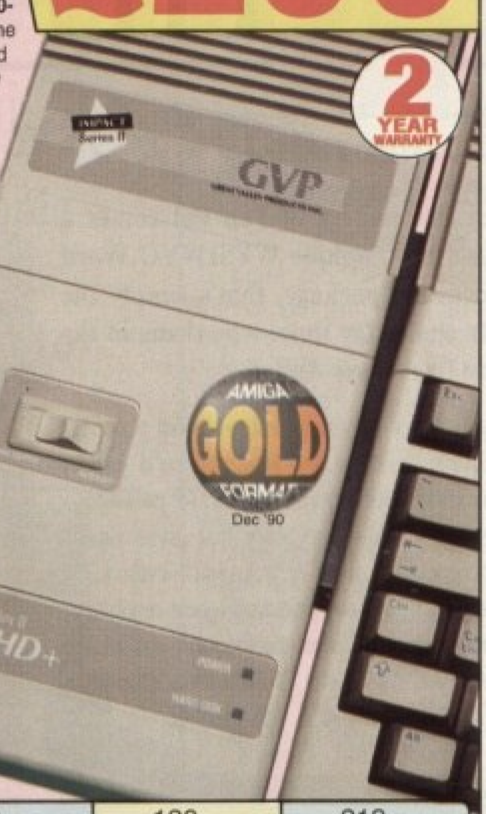
Every **A500-HD8+** incorporates the latest in hard disk technology with a factory installed and formatted 1" high, low power, 3½" SCSI hard disk, offering storage capacities up to 213Mb.

The **A500-HD8+** also offers the ultimate in expandability. Additional SCSI peripherals can be attached to the external SCSI port. Up to 8Mb of internal Fast RAM expansion can be installed using state-of-the-art SIMM memory modules. The unique internal Mini-Slot allows for future expansion. Every **A500-HD8+** has its own dedicated power supply, ensuring that the Amiga 500 power supply will not be overloaded and an internal fan to prevent the unit from overheating.

**WHAT THE PRESS SAY...**

*'Superb build, excellent aesthetics and blinding speed make this the best A500 hard drive' ...*
AMIGA SHOPPER

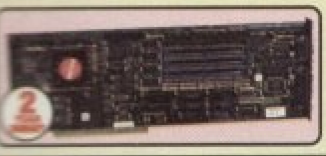
*'GVP claims this is the fastest hard drive in the world and none of our tests could prove that wrong ... Untouchable. THE choice'*
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## ACCELERATORS

FOR THE AMIGA 1500/2000/4000

All GVP G-Force accelerators can be turned into a hard card by adding a Mount Kit (GVA 4251 - £34.95). Any 1" SCSI drive can then be mounted on to the accelerator.



| | 030 25MHz | 030 40MHz | 030 50MHz | 040 33MHz |
|---|---|---|---|---|
| Processor | 68030EC | 68030EC | 68030 | 68040 |
| Speed MIPS | 7.48 | 12.1 | 15 | 30 |
| Speed MHz | 25 | 40 | 50 | 33 |
| Math co-proc | 68882 | 68882 | 68882 | Built-in |
| Standard 32-bit RAM | 1Mb | 4Mb | 4Mb | 4Mb |
| Maximum 32-bit RAM | 13Mb | 16Mb | 16Mb | 16Mb |
| Extras | SCSI | SCSI | SCSI | SCSI Ser/Par |
| Code | UPG 0110 | UPG 0430 | UPG 0533 | UPG 0740 |
| PRICE | £499 | £799 | £1099 | £1499 |

## HARD CARDS

FOR THE AMIGA 1500 & 2000

- *Factory installed Hard Drives*
- *0, 80, 120, 213, & 420Mb options*
- *On-board 8Mb memory sockets*
- *Add up to 6 SCSI devices*



The Impact II HC8 hard cards are the equivalent of the HD8+ hard drive, but for the 1500 and 2000 models. They are some of the fastest hard drives available, and incorporate an unpopulated 8Mb RAM expansion.

| | | |
|---|---|---|
| 0Mb | HAR 1300 | £129 |
| 40Mb | HAR 1340 | £299 |
| 80Mb | HAR 1388 | £349 |
| 120Mb | HAR 1422 | £429 |
| 213Mb | HAR 1533 | £579 |

## PLUG-IN HARD DRIVE OPTIONS

| MODEL | 42Mb | 80Mb | 120Mb | 213Mb |
|---|---|---|---|---|
| HD8+ HARD DRIVE | £299 INC VAT Ref: HAR 0840 | £399 INC VAT Ref: HAR 0888 | £499 INC VAT Ref: HAR 0922 | £599 INC VAT Ref: HAR 0933 |

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~~£49.95~~ £39.95
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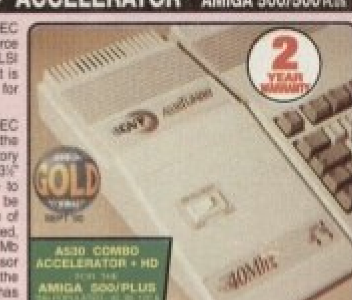
## HD8+ HARD DRIVE A530 HD & ACCELERATOR

| | HD8+ | A530 |
|---|---|---|
| **HARD DRIVE** | | |
| SCSI HARD DRIVE 40, 80, 120 & 213Mb VERSIONS | ● | ● |
| ULTRA FAST ACCESS | ● | ● |
| TRANSFER RATE UP TO 2,100K/sec* (*THE RATE OF THE 213Mb HD) | ● | ● |
| **ACCELERATOR** | | |
| 40MHz 68030EC CPU | | ● |
| OPTIONAL 68882 MATHS CO-PROCESSOR | | ● |
| RUNS AT 12.1 MIPS (FASTER THAN AN A3000!) | | ● |
| HARDWARE SUPPORT TO MAP KICKSTART INTO 32-bit WIDE FAST RAM FOR FASTER OPERATION | | ● |
| **RAM BOARD** | | |
| UP TO 8MB OF 8 OR 9-bit FAST RAM (8 OR 9-bit WIDE SIMMS - 120ns OR QUICKER) | ● | |
| UP TO 8Mb OF 32-bit WIDE FAST RAM (32-bit WIDE SIMMs - 60ns) | | ● |
| 1Mb POPULATED | | ● |
| **OTHER FEATURES** | | |
| 'CUT-OFF' FOR 100% GAME COMPATIBILITY | ● | ● |
| SCSI CONTROLLER FOR UP TO 7 DEVICES | ● | ● |
| VLSI CUSTOM CHIP | ● | ● |
| FAAAST ROM SCSI DRIVER | ● | ● |
| IDENTICAL COLOUR & STYLING TO THE A500 | ● | ● |
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| REMOVABLE MEDIA SUPPORT | ● | ● |
| DIRECT MEMORY ACCESS (DMA) STYLE FOR ULTIMATE PERFORMANCE | ● | ● |
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| 2 YEAR WARRANTY | ● | ● |

## PLUG-IN HARD DRIVE + ACCELERATOR AMIGA 500/500PLUS

The **GVP A530** incorporates the same 68030EC processor found in most of the new GVP G-Force accelerator range, as well as using the same VLSI custom chip and FAAAST ROM SCSI driver that is used in GVP's Series II SCSI/RAM controllers for the A1500/2000.

It also incorporates the Motorola 68030EC processor running at a blistering 40MHz and the latest in hard disk technology with a factory installed and formatted 1" high, low power, 3½" SCSI hard disk offering storage capacities up to 213Mb. Additional SCSI peripherals can be attached to the external SCSI port. Up to 8Mb of 32-bit wide Fast RAM expansion can be installed, using state-of-the-art SIMM memory modules (1Mb supplied as standard). A 68882 maths co-processor can also be added to the unit to boost the machine's math calculations. Every **GVP A530** has its own dedicated power supply.




*"... the build quality is excellent ... in terms of performance, their gear is the best ... their equipment is worth every penny'.*
94% AMIGA FORMAT 9/92

## PLUG-IN HARD DRIVE & ACCELERATOR OPTIONS

| MODEL | 42Mb | 80Mb | 120Mb | 213Mb |
|---|---|---|---|---|
| A530 COMBO HARD DRIVE & ACCELERATOR | £699 INC VAT Ref: HAR 0962 | £799 INC VAT Ref: HAR 0968 | £899 INC VAT Ref: HAR 0974 | £999 INC VAT Ref: HAR 0983 |

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PLUG-IN OPTION FOR HD8+ & A530

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Which computer(s), if any, do you own? .............................. 68J

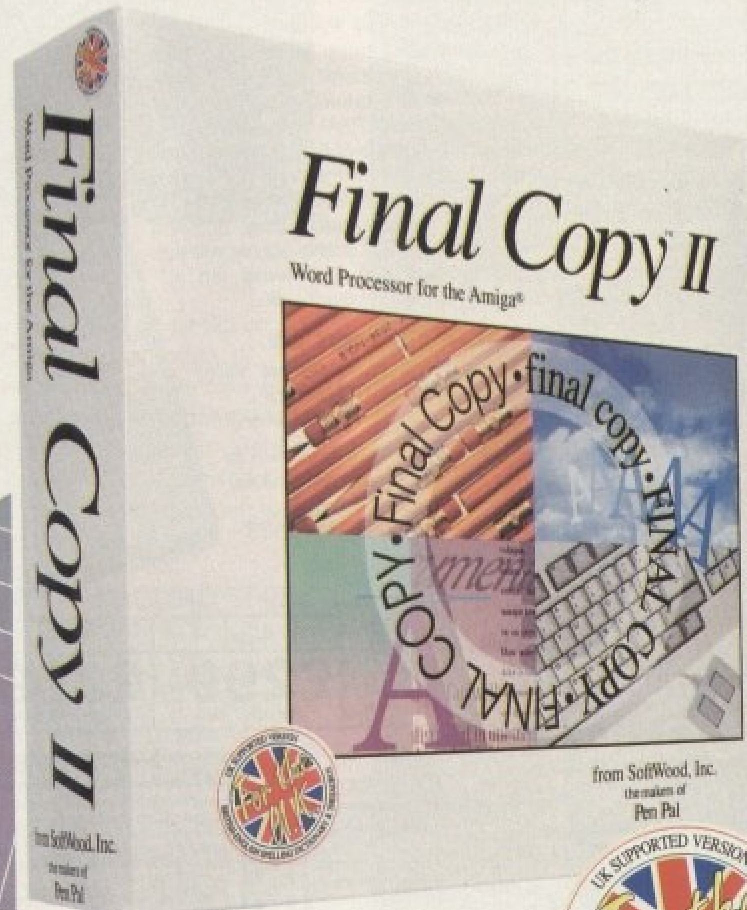
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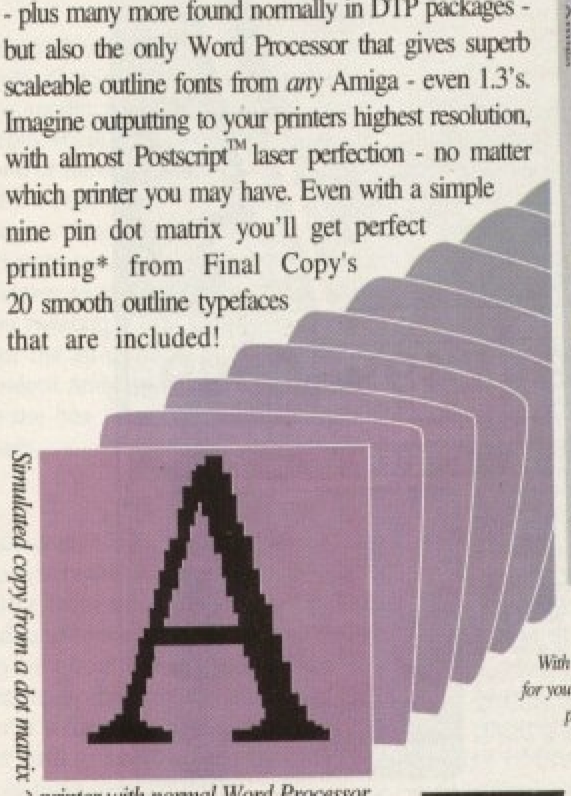
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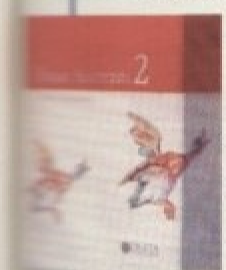
AMS

# Everyone a winner!

Across the country are dozens of happy *AC* competition winners. The lucky people named below have all won one of our recent competitions. So don't forget to enter – it could be you next!

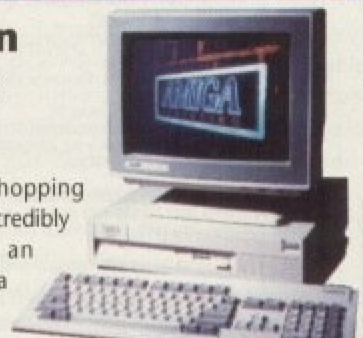
## Home Accounts 2 competition Issue 54

Digita International kindly donated £1,000 worth of this excellent finance package. The 20 lucky winners are S Riches, Burnt Oak. Bruce Gilson, Slough. Darren Crookshanks, N. Ireland. D R Gorski, Rugby. S P Morris, Billington. J S Smith, Gainsborough. Scott Galloway, Aberdeen. Eugene Morgan, Co Down. R W Baker, Halifax. Warren Lee Melia, Blackburn. Christine Fordham, Essex. Ian E Campbell, Blackpool. J D N Smith, Bideford. I G Leigh Milton Keynes. S R Price, Devon. Kevin Allen, Scarborough. N Abba, Derby. Richard Caylor. M J Foster, Blackpool. K D Barnett, Kenilworth.



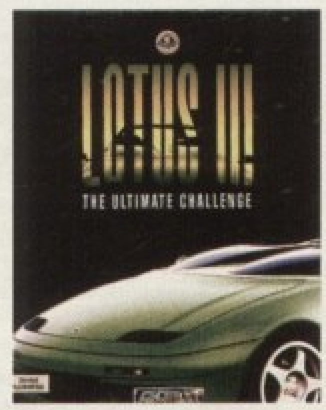
## A3000 and OpalVision System Competition Issue 57

This fabulous prize from Calculus, worth a whopping £2,000 certainly created a lot of attention. The incredibly lucky winner of a superb Amiga 3000 and an Opalvision 24-bit graphics card and multimedia system is Mr Nashad Abba of Derby.



## Lotus and Zool competition Issue 55

To bring you the very latest Gremlin games we put Lotus III and Zool together. The winners are S Bullock of Suffolk. R Whitehead of London. P M Connelly of Rhyll. D Rees of Cambridgeshire. M Haley of Derbyshire. A NIxon of South Yorkshire. S Gow of Surrey. AD Bowman of Watchet. S Restorik of Liverpool. P Falshaw of Preston. M Rendell of Trer Ddol. K M Holmes of Edgeware. D Lund of West Yorks. N Aulk of Shape. R Jupp of Walsall. D L Kenny of Notts. J Ragget of Basingstoke. C Redmond of Cheshire. R Cundy of Ashbourne. S H Dunn of Mid Glamorgan.





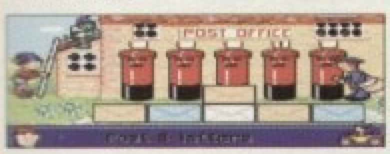


## Zool Pack Competition Issue 57

Silica Systems gave away five Zool Packs, normally only available with the purchase of a new Amiga. They go to the following people: T Helliker of Somerset. T Beales of Bermondsey. C Picker of Sale. B Bodkin of West Sussex. G Neiman of Canada.

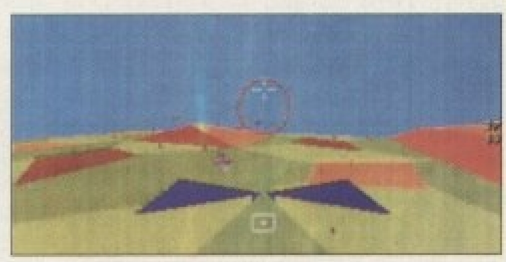
## Noddy's Playtime competition Issue 56

The Jumping Bean Company have revived Noddy and Big Ears in their new children's educational package. To celebrate they have given away five libraries of the 24 original hard-backed Noddy books to J Barnes of Lancs. H Salter of Wolverhampton. R Robert of Clwyd. G Smith of Pontefract. R W Mitchell of County Antrim. Noddy posters will go to 100 other people, too numerous to mention here!




## Gunship 2000 competition Issue 55

We got together with Microprose to bring you an excellent flight sim game, Gunship 2000. Twenty copies go to the following people: L Devlin of Turkey. G E Lucas of Stoke on Trent. S Banton of Wallington. M Hugget of Surrey. R Bullwant. R Middleditch of Blackwood. M Lake of Hants. M Keyworth of Worcs. H Singh of Huddersfield. T Rea of N. Ireland. S Ingram of Northampton. M Harris of Sutton Coldfield. J Uddin of Birmingham. L Milburn of Askern. K Muston of N. Yorks. J Swingburn of Northumberland. R Arnold of Staffs. P Johnstone of St Andrews. J Taylor of Fife. G Hutchinson of Southsea.



## Gold Disk Office Competition Issue 54

To turn your Amiga into an office Gold Disk kindly provided the following five fortunate people with a copy of Office. Michael. J. Cox of Basford, S Towns of Abingdon, Nigel Griffiths of Gwent, P. Granes of Doncaster and R. J. Davis of Devon.



# Ezra Surf's Postbag

*Got something to say through the pages of AC? Ezra Surf is our mailman, dedicated to sitting in a corner reading your letters and selecting the most interesting for publication.*
*Drop him a line at:*
*Ezra Surf's Postbag, Amiga Computing,*
*Europa House, Adlington Park,*
*Macclesfield SK10 4NP.*
*Please don't enclose saes as Ezra just hasn't got enough paper to reply personally. He might also have to shorten your letters, so don't be offended if you end up getting the chop.*

## CD survivalist

I have been a Commodore products user for about ten years since I bought my Commodore 64 in 1983, to my new A4000, and I have been following the CDTV's evolution with enthusiasm from its very first steps. As an Amiga user, I was just waiting for a CD-ROM player compatible with CDTV titles.

Now there are two competitors on the interactive multimedia market, Philips and Commodore, and I still believe in CDTV the same as I know the Amiga has nothing to worry about from the PC, but I worry.

Philips have much more advertising than Commodore, the CD-I player can read Kodak Photo CDs and is preparing for full motion video, whereas CDTV has none of these advantages.

Philips are also claiming that they've set a new world standard for interactive multimedia! There are also supposed to be plans for hardware modules to allow CD-I to read both CDTV and CD-ROM titles.

In the face of such an aggressive marketing strategy, CDTV may suffocate, and risks a slow agonising death just like Betamax when it was crushed under the weight of VHS.

Maybe Commodore is already working on CDTV 2? If not, my message to them is wake up and preserve their golden child from economic strangulation!

A new machine is vital, and should have the AGA chipset, Workbench 3.0, the ability to read Kodak photo-CD, MPEG, and full motion video.

They could even make it CD-I compatible if this is really going to become a world standard, and it should definitely have an "Amiga inside" logo such as the "Intel inside" used on PCs.

If such a CD player appears, I'll buy it even if it is twice the price of other players and doesn't fit in my A4000!

*Philippe Duchenne, Charleroi, Belgium*

*That's quite a wish list! To put your mind at ease, Commodore are seriously considering Photo-CD for CDTV, but have decided to wait until there's a big enough market for it, a cautious move which might turn out to be a good one if, despite wildly enthusiastic press reports, the public greets it the same way they greeted LaserDisc and DAT.*

*As for MPEG, Commodore should be implementing this, as well as full motion video, some time this year. How they intend to develop CDTV is a bit of a mystery at the moment, but the company's repeatedly stated commitment to CD-ROM technology is at least a good sign for the future.*

*CDTV-2 is a development about which many have speculated and, though Commodore refuse to talk about it, using the AGA chips or even the AAA chips on a new CD machine would make a lot of sense as such a move would leave CD-I standing.*

*Until a large number of software houses write for the AGA chips, however, and the software base builds up, don't expect to see CDTV take on board the new technology.*

## Cue to subscribe

I have recently read through the January issue of *Amiga Computing* and I was wondering if it would be at all possible to purchase a back issue from you? I borrowed that copy from a friend, so could you advise me on how to go about getting my own copy?

*C Bradford, Lincoln*

*Back issues have been in great demand recently, mainly because AC has sold out in many areas of the country, so we'll print this reply for everyone else out there who might have missed a recent issue.*

*Every month, there appears in our magazine an advertisement placed by Europress Direct containing, among other things, reader offers and an order form for back issues.*

*Presently, the January issue is available for £3.25 and is order number 9755. Cheques made payable to Europress Direct should be sent to:*

*Europress Direct, FREEPOST*
*Ellesmere Port, South Wirral L65 3EB*

*Alternatively, you can order by credit card on 051-357 1275. Please try to quote the order number as this will ensure you receive the correct issue.*

## Route finder

Could you please give me the address of any company that may produce a disk or disks similar to GB Route that will either cover a country as a whole or as singular areas? I am interested particularly in Europe, is anyone else? Could make an interesting CoverDisk.

*E Gregg, Crewkerne*

*I don't know of any other decent route finder program on the Amiga, but if someone wants to create a European road map for GB Route, we'll be happy to put it on the CoverDisk.*

## Questions galore

Star letter

So the Amiga 1200 is the evolution of the species? What about the A600? Will its days now become numbered?

After reading about the A1200 in the January issue, it does sound impressive and it seems that it is better than the Atari Falcon, at least in price. It sounds like the A600 is being left miles behind.

Will software houses stop making games for the A500/A600 in the future and just concentrate on 32-bit games? Will Commodore turn the A600 into an A600 Plus by putting Kickstart 3 and the new chips in it then try to sneak it onto the market like they did with the A500 Plus? Or will they drop the price and make it a console beater?

I feel we might all have made a big mistake by buying the A600 when, for only about £80 more we could have had a much better machine. Will the A600 last the year out?

*S McKechnie, Armadale*

*Yes, the A600 will (probably) last the year. It is a sad reflection of the Commodore-induced confusion rife in the Amiga market that such a new machine is already seen as a dodo by most users. As for an AGA-equipped A600, I wouldn't rule it out, though rumours about an Amiga CD-based AGA console should be treated as just that – rumours.*

*One certainty is that games will continue to be produced for the A600/A500 range for a long time to come. There are millions of these machines out there and they will continue to constitute the backbone of the Amiga games market for years.*

*The most significant change we may see is that some games will be playable only on the A1200 (such as the new Harrier sim AV8B) and that many may appear in two versions, one with better graphics for the A1200 and one for the older machines.*

*How the software companies will play it is yet to be made clear, but we can expect them to try to capitalise on the high expectations of A1200 users who are waiting for 256-colour games and are prepared to pay over the odds for them. Prediction: £40 will not be an unusually high price for new A1200 games.*

## Amos cookbook

I write to you because I need your help. I am learning to program in Amos, and I recently found out that your magazine has a special page devoted to Amos, so I looked into some old issues and I found an interesting feature by Peter Hickman on how to program a Pacman game.

However, the article was continued in other issues, and that's exactly the problem! I do not have those issues in my possession and I would really like to have the remaining parts of the feature. I would therefore be very grateful if you

➤

# Esp

would send me a copy of the remaining pages from the other issues.

*Ramon Geritsen, Woerden, Holland*

*You're in luck, Ramon, as this month we include on the CoverDisk what we've called the Complete Amos Almanac, a whole series of our Amos Almanac tutorials including the Pacman articles you specifically require.*

*We are presently considering repeating the exercise for the programming and ARexx columns, so drop us a line if you're interested in either of these features.*

## Lend an ear

My wife and I have a large video collection and we enjoy watching them often, but being hard of hearing my wife does not get the full enjoyment from them.

I would like to be able to put subtitles on them for her. Other than two video recorders, what equipment would I need and how much am I looking at? Would a simple genlock do?

I am new to the Amiga scene and am very grateful to everyone at AC for all the help and information I have gleaned from your magazine. Keep up the good work.

*Peter Badrick, Durham*

*The titling process you describe will be a lengthy one. You don't have any video editing equipment, so you'll have to either do all the titling at one sitting or carry out a lot of start and stop operations. This can be tricky, and synchronising the titles to the video will be a major headache.*

*If you're prepared to do everything at once, simply buy a titling package and a standard genlock. The Rocgen unit (Silica 081-309 1111) and Big Alternative Scroller (Alternative Image 0533 440041) should do the trick.*

*Next, watch the film from start to end and decide which subtitles you need and when, then input these into your titling package.*

*Last, but not least, run video A, tape on video B, and keep the Amiga between the two with genlock in action and subtitles ready to pop up at the touch of a button.*

*The operation is simple, though time consuming, but you must remember that commercial videos cannot be copied in this way without the permission of the copyright holder.*

## Forward planning

In your February 1992 edition, you had a section on computer-aided design in which Stewart Russell reviewed a CAD package called Plans v2.1.

I have the shareware version 1.0 and would like to obtain the commercial version complete with manual.

However, I have been unable to find a copy or even anyone with knowledge of the package in Australia.

Could you please supply me with the name and address of a shop or agent which I can write to and arrange the purchase of Plans v2.1?

*Ron Reid, Nundah, Australia*

*Sorry, Ron, but I haven't a clue where Plans 2.1 can be purchased, or even if it is still in circulation. The article you speak of was printed over a year ago and the Amiga CAD world has moved on since then, but if one of our readers with knowledge of a Plans dealer would write with the answer, we'll gladly pass it on.*

## Bad advertising

So many people have written to us since the Amiga Market mail order survey that we thought this would be a good time to explain how we deal with complaints regarding advertisers.

Readers should write to Barbara Newall, our ads production person, at the same address as ESP, with full details of the complaint.

We will then fax the company concerned and post them a copy of the letter with our own covering letter. If the company does not respond, or seems not to be in a hurry to solve the problem, we will contact them by telephone.

If results are still not forthcoming, and the advertiser is determined to carry on as before, we pull the advertisement, a last ditch action which we recently took with regard to both Dynamite Computers and Futureworld.

Dozens of letters have been received about both companies, but as yet we have seen very little evidence that individual readers are taking further action on their own behalf.

Finally, we recently received a letter from an Amiga user so disgusted with mail order companies that he has decided to set up "Amiga Activist", a database of complaints about mail order companies which he will make available in the public domain. Anyone who would like to contribute their own tales of woe to Amiga Activist should write to:

*Ian Agar, Cadgersloan*
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*Scotland, FK4 2EU*

## Clever CLI

Having read Richard Wilson's letter in issue 57, I felt compelled to write in with a pearl of wisdom gleaned from my time using the CLI with only one floppy drive.

If you are unsure of the usage of a command, just type the command followed by a space and a question mark. This has the effect of loading the command into memory and informing you of its usage, and the command's parameters can be entered without the Workbench disk in the drive.

Take the case of the Install command. Entering "Install ?" will elicit the reply "DRIVE, NOBOOT, CHECK", and at this point the Workbench disk can be removed as the command is now in memory. Putting a disk in the drive and typing "DF0:" will carry out the Install.

Now for some reader interest – yes, we would like a compilation of your programming features in one booklet!

*Philip Bitis, London*

*That's a clever way around a right royal pain for the average single floppy user, though it will only work for one command. As for compiling our Almanac pages, check out this month's CoverDisk for the Amiga Computing Amos cookbook.*

## Driven mad

I was totally horrified to find out recently that some external disk drives won't work with the A1200.

I mean, it's all very well when Commodore change the operating system and upgrade the graphics, but such piddlingly small changes to the voltage output on the disk drive connector, causing misery to so many users?

If the company had any respect at all for its existing users, they would offer to exchange the drives or at least give us some technical support.

*G Horton, Preston*

*You're probably not alone in the Amiga community in your reaction to the latest Commodore cock-up. Why the change was made is hard to say as there seems no technical necessity. The suspicion is that cost cutting was the only reason for the change, but we'll probably never know.*

*When our technical editor phoned Commodore's engineering division in Milton Keynes to find out what had changed and why, the initial response he got was "have we changed the drive port?", so don't be too surprised if Commodore are slow in coming forward with a list of peripherals which might be affected.*

## Scottish footie

After reading the review in your February issue on Premier Manager I would totally agree with your reviewer's decision that the game looks and sounds good and is about the best footie management sim going.

However, there's one good reason I won't be buying this one or, more to the point, any other footie sim. Why? Because all the software houses believe that all Amiga owners are English!

Every football game is based on English clubs or the English league. What about us Scots up here? Is our game inferior?

All you programmers in the software houses - let's see a Scottish football sim or at least one with the option to choose a nationality. And remember - it's still two points for a win up here.

*Duncan McWilliams, Dunfermline*

*Our Scottish editor would like it be known that he heartily agrees, though he did say that anyone who wanted a simulation of Dunfermline FC has to be a bit of a masochist unless it's set during Jock Stein's time at the club.*

*This sort of feeling, if translated into either a boycott of biased products (not a course of action I'd recommend) or a petition from as many disgruntled Amiga fitba' fans as possible might provide the incentive needed by software houses either to tweak existing games or to think about doing another version for consumers north of the border.*

*You could just stick with Kick Off 2 and try to take Scotland to the World Cup final, of course (good luck, pal! – Ed)*

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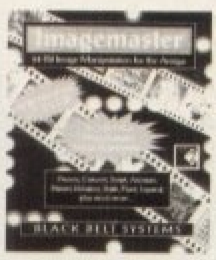


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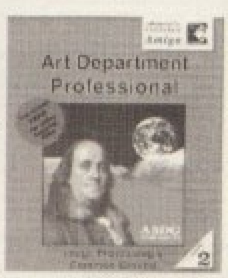
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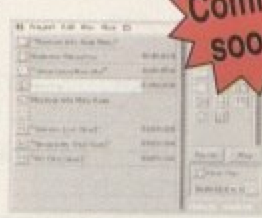
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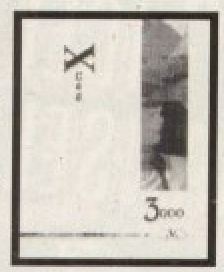
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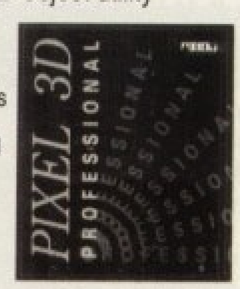
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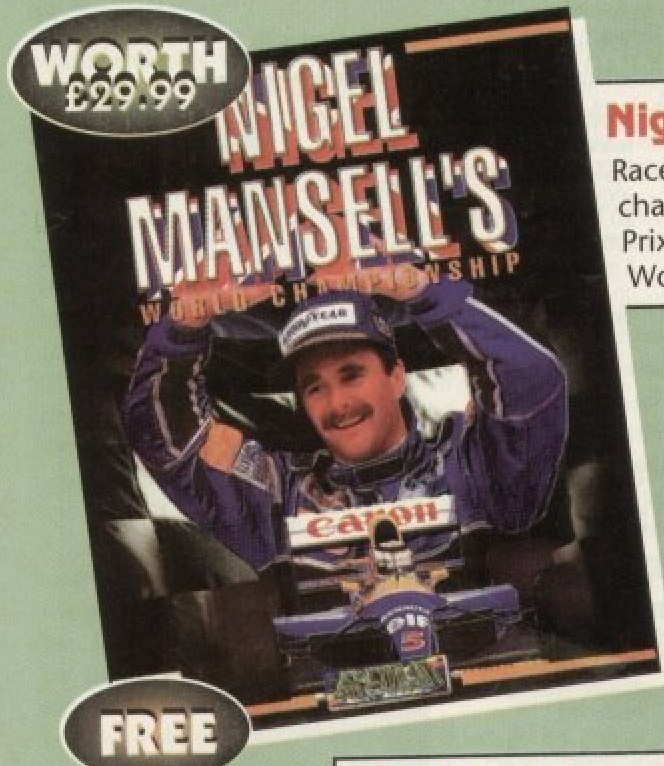
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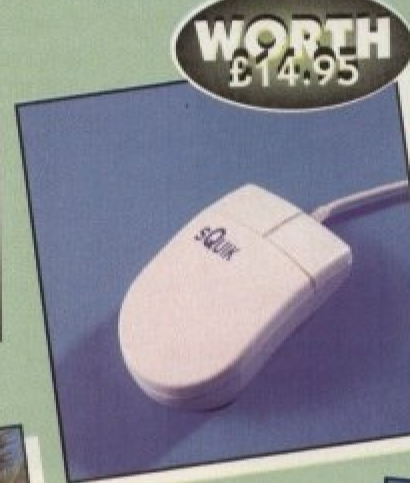
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# AMIGA Update

**IS DPaint IV as slow as we feared? Is there room for Agfa's Amiga Starter Fonts Pack on your hard disk? We look at these and more revisions**

Since the release of Workbench 2.04 and its Compugraphic outline fonts, the Amiga's conversion to Agfa Intellifont technology has continued apace.

Just about every well-dressed productivity package now has support for Agfa standard fonts, a great improvement since the days when only a few top-end DTP packages had knowledge of anything other than clunky old bitmaps.

However, Agfa themselves (formally AGFA Compugraphic) were slow to recognise the ground-swell of support for the fonts, and for long the only Agfa-style typefaces available were PD or shareware examples of varying quality. The real McCoy is at last available in the shape of the Amiga Starter Pack.

Containing 12 typefaces from Agfa's enormous collection, the starter pack is branded a "sampler", and as such includes a fair variety of fonts. In addition to Times Italic, Times Bold, and Triumvirate Condensed (designed to supplement CG Times and CG Triumvirate supplied with Workbench 2.04), a few wackier fonts such as Branding Iron and Park Avenue have found their way onto the package's four disks.

## Invitations

Of limited appeal to the general DTP fan, these can be of use for party invitations and other design jobs and serve as good examples of the quality of the range as a whole.

Without exception, official Agfa fonts have been lovingly crafted by their designers, whether new designs or conversions from old hot metal favourites, and will always add a touch of class to a production.

The main advantage of Agfa fonts, apart from their being one of the two main standards in the DTP world, is that they are not tied to PostScript but designed to work with any printer. When output to a 24-pin dot matrix printer or bubblejet, therefore, print quality is remarkably good, and excellent results are possible even with a standard 9-pin.

Only hard drive users will, unfortunately, benefit much from these fonts. Unlike an Amiga bitmap font, an Agfa outline font is defined by a mathematical language of sizes, angles, and radii, and therefore takes up a fair amount of space on disk – over 100k for some of the more outlandish members of the family. To build a font library of any size, a hard drive is therefore a necessity rather than a luxury.

As far as gripes are concerned, I was unimpressed to receive the wrong installer disk, which tried in vain to install completely the wrong typefaces, and the thought of novice users left in the clutches of the bugged 2.04 release of the Fountain font installer program makes me shudder with an angst-like sympathy.

Those with a little experience of the Amiga will be fine, but others might find a rival to the printer driver in the nightmare stakes.

For the future, I'd like to see professional Amiga users offered the same service enjoyed by their PC and Mac owning colleagues. Rather than throw the odd floppy-disk based crumb to the Amiga fraternity, merely scratching the surface of what is a gargantuan collection of fonts, Agfa should hasten to release a CDTV disc containing as many fonts as possible.

The approach taken for other formats, CD-ROM enables the user to buy fonts as he or she needs them by telephoning Agfa with a credit card order in exchange for the code number which will enable the font in question to be dragged off the CD and onto hard drive. Without such serious support, official Agfa fonts will continue to be swamped by their shareware shadowers. Price for the Agfa Starter Pack is £32 and it is available from Megatype on 0759 58988. A second pack, Video unlimited containing 25 popular fonts for video titling work, is available from the same distributors priced £45.

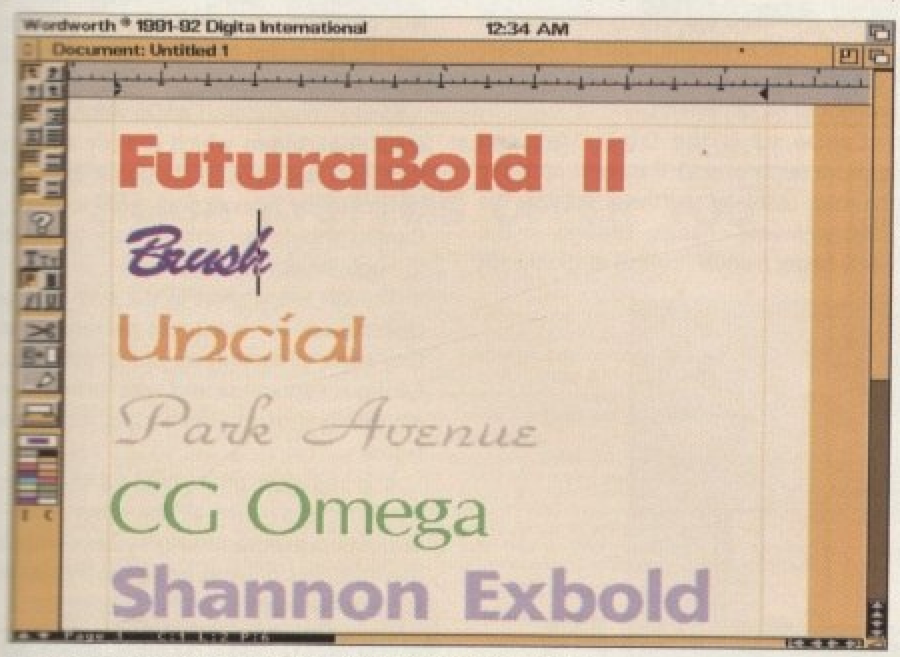
## Directory Opus v4.0

The only commercial disk manager available for the Amiga, Directory Opus is still the best, and release 4.0 stretches its lead even further.

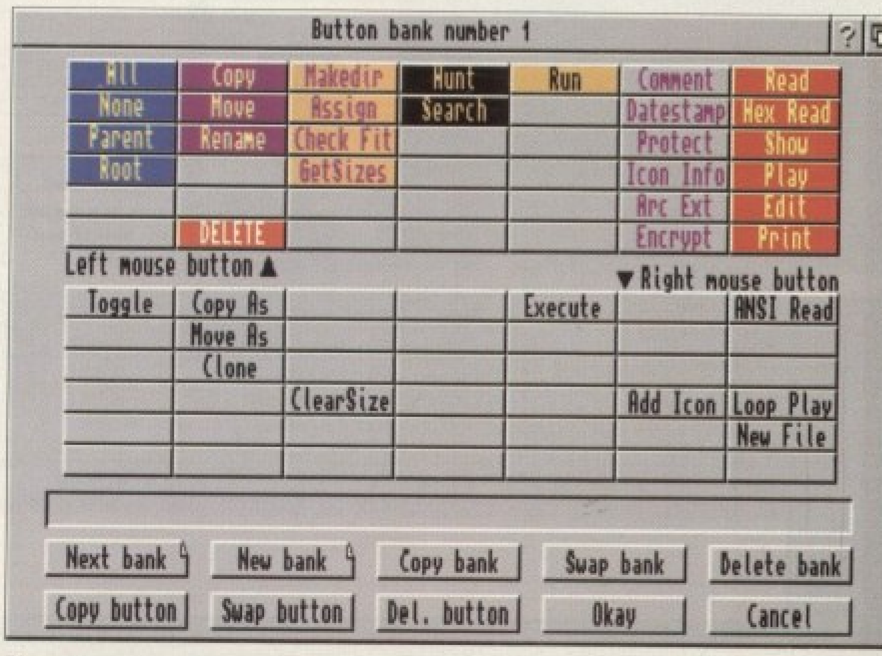
Despite the claims of SID 2 users that for a shareware fee one can have all the features of Opus, the program continues to offer more features than any other utility of its kind.

Latest additions to its list of talents include the inevitable AGA support. When viewing files or animations, Opus will now open any AGA picture and supports all new screen depths and resolutions, giving it an immediate appeal to A1200 owners.

Other enhancements include enhanced ➤




*More expensive than shareware fonts, Agfa's quality can't be denied*




*Directory Opus 4.0 has an improved configuration section*

ARexx support and a new hotkey function. The former will be of use only to the ARexx nuts among us, but the ability to define single keystroke short-cuts and run other programs simply by pressing, say, a function key, gives Opus a whole new dimension.

A variety of cosmetic changes have been made, but other than improvements to what was already a friendly interface, and a few tweaks to the user configuration features, little else has changed.

Hard drive users, for whom Directory Opus would be an ideal birthday present, should call HiQ Ltd on 081-909 2092.

## DPaint IV AGA

Previewed months ago, the release version of DPaint IV AGA has at last gone on sale, though little has been changed since its first press viewing.

However, as initial impressions of DPaint IV AGA were based on an unfinished preview program, it was difficult at the time to make judgements concerning the speed at which basic operations were carried out. These ranged from slow to snail's pace in the original version, and many hoped for improvements before the package was released to the buying public.

The bad news is that DPaint IV is as slow as ever, especially in the new Workbench 3.0 screen modes. Even when running on an A4000, Ham8 animations are turgid at best, and screen refresh leaves a lot to be desired. Menus, requesters and basic painting tools all slow down dramatically as soon as more than 64 colours are used, and on the A1200, there are times when the situation becomes unbearable.

Having said this, DPaint IV AGA is still the only complete AGA paint package dealing with Ham8 and animations, but for £99.99 it must surely be there for the taking.

If, in its Ham8 mode at least, this program survives as the most popular Amiga art package, it will be due more to its status as a sacred cow than to the author's skill at implementing the new screen modes.

Electronic Arts can be contacted on 0753 549442.

## HotLinks v1.1

SoftLogik's dynamic data exchange system, HotLinks, has had a chequered life so far. Though recognised by many as a well thought-out system and designed with as much open-endedness as possible, it has found support with only a handful of third-party software houses.

Version 1.0 of the HotLinks software, though good enough at its job, suffered from several niggling faults, so the tweaks and improvements made for 1.1 are important to the user if not major items in their own right.

Probably the biggest changes have taken place in BME, the bitmap editor. Though still restricted to bitmap files, the program will now load and edit TIFF files in addition to the IFF and GIF formats originally supported. As TIFF is a popular format in the DTP world, its inclusion makes BME much more useful to the professional.

An auto-trace feature has also been added through which HotLinks users can create DR2D structured drawings from IFF bitmaps. Though a format not much supported these days, DR2D clip art can be used in both of SoftLogik's flagship packages, PageStream and Art Expression.

Auto trace can be an extremely useful tool when converting sketches or maps for use in a drawing or layout, and its addition is very welcome.

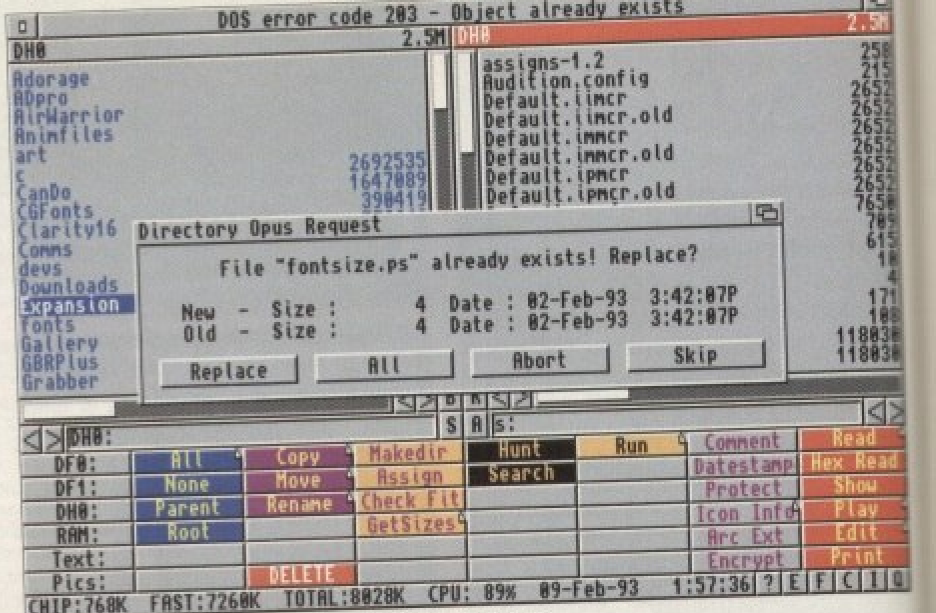
PageLiner, the HotLinks text editor, has also been improved with direct support for PageStream font lists. What this means is that the user can now summon the font manager screen to directly change fonts in a document rather than just change style tags as in release 1.0.

Function key support has been added so that the user can change font or style tag with a keypress, or standard text strings – such as the glossary feature found in Wordworth 2 – may be inserted at any point in a document. Though still a text editor at heart, these and a number of other more minor tweaks make PageLiner a much more usable program.

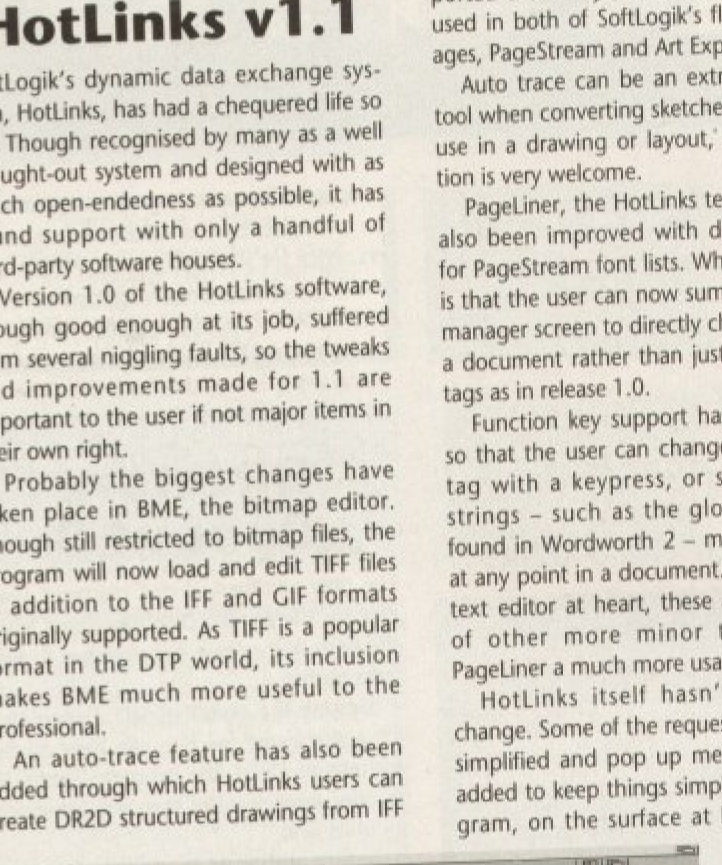
HotLinks itself hasn't seen much change. Some of the requesters have been simplified and pop up menus have been added to keep things simple, but the program, on the surface at least, works in exactly the same way as it used to.

It may have been just me, but stability seems to have been improved over release 1.0 which always seemed to suffer from nerves somewhat.

HotLinks Editions is available from Silica Systems on 081-309 1111.




*Now more disk control than ever is available through Opus*




*HotLinks' BME goes to work on the beauty and the beast*

## CanDo v2

Whether you call them software authoring packages (SAPs) or automatic application generators (AAGs – only kidding), packages such as Hyperbook, Foundation and CanDo are designed to make certain programming tasks easy for the complete novice, and there was a flurry of interest in them before everyone figured out that complex tasks still required a certain amount of programming.

CanDo v2 is the latest SAP, and improvements over v1.6 make it probably the most usable of the three. Possibly the most welcome change, though, is the vastly better manual. Instead of the thinish booklet supplied with earlier revisions, CanDo now offers a 400-page ring-bound manual complete with extensive index and masses of information on the program's commands and functions.

Examples and full syntax information are supplied for all commands, so learning to use CanDo on a professional level is much easier than before, when fishing through the example scripts was often the best way to figure out a command's use.

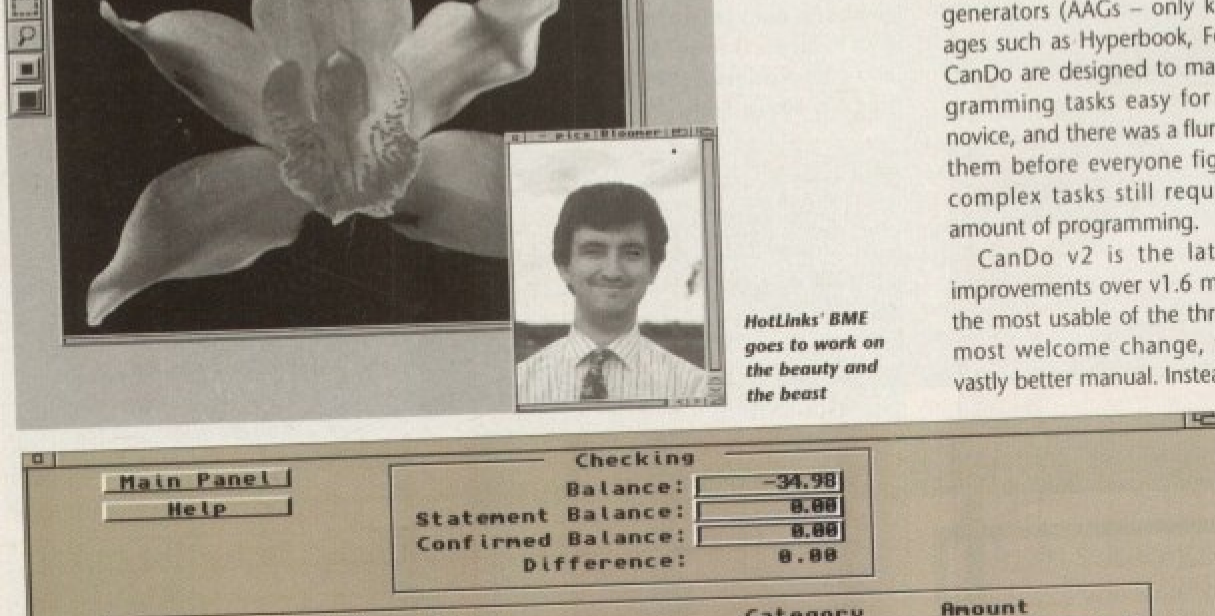
The number of commands and ARexx functions supported has also been increased to the point where CanDo can boast greater flexibility than any other authoring package, though its continued lack of direct control of CDTV, LaserDisc and the like makes its multimedia authoring status a little suspect.

Unlike Foundation, CanDo will not generate applications which directly address such external devices, though if they are controlled by ARexx-compatible software CanDo should be able to talk to them through the other program.

Though falling short of the over-the-top claims made for authoring packages that they make programmers out of everyone, CanDo is easy to use and with its friendlier manual is much easier to get into than before.

It is still slow on a standard machine, however, and – like all the other SAPs remains a programming system with user-friendly front-end generator thrown for good measure.

AC




*CanDo 2 has a better manual and improved commands*

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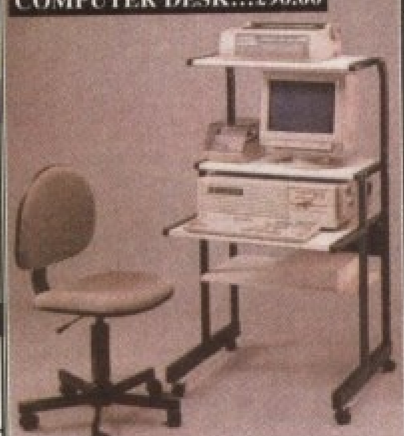
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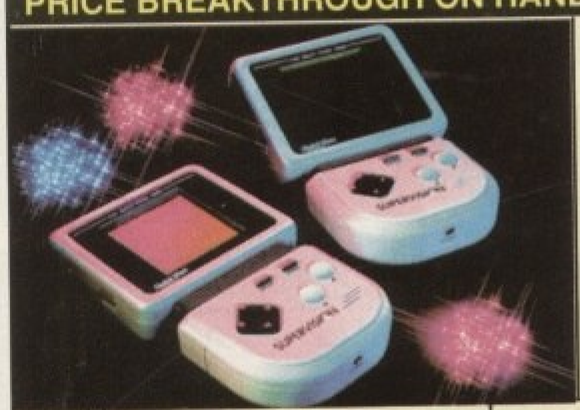
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# Personal services

## New paint package exposed! Paul Austin reveals a cheap and cheerful that doesn't mind offering a few extras

Since the release of Amiga, The Next Generation – namely the A1200 and A4000 – most people have been waiting for the PC invasion as the software houses cash-in on the 256 screen colours now offered as standard on both of the above.

An obvious target for would-be imports is obviously the games market with the plethora of PC simulations being an obvious target. However, much to my surprise a productivity package appears to be one of the first to put its foot on the evolutionary ladder.

Although there are several clues as to the software's alien upbringing, perhaps the strongest hint of its dubious past is reflected in the maximum colour range of 256 – in other words no Ham8. In fact, there's no HAM whatsoever.



*If you keep things simple, 256 colours can be spectacular*

OK, I admit it sounds a bit naff but believe it or not Personal Paint does have its strengths. However before we examine the hot spots I'll get all the bad news out of the way early.

Unfortunately, along with no HAM, I'm afraid animation is also obvious by its absence. As far as application and painting is concerned the package is almost identical to DPaint with few surprises and equally few disappointments. Like its counterpart it isn't particularly quick but that appears par for the course with some of the new AGA modes.

### Unusual

Although PPaint may have noticeable PC tendencies, it must be said the interface doesn't even hint at its unusual upbringing – which incidentally is being hotly denied by MicroPace, PPaint's UK distributors .

At a glance PPaint looks every inch a DPaint replica with the only difference being a rather sad attempt at individuality in the form of a shunted tool box which now lurks on the left side of the screen.

Although seemingly identical to DPaint, the aforesaid toolbox does hold a few surprises with perhaps the most impressive being the program's built-in image processing options.

Among the usual array of DPaint icons come a collection of 34 image processing tools which include old favourites such as dithering, sharpening, tint, texture, dark to light, light to dark, emboss, blur, edge detect, randomise and watercolour, most of which are repeated in various formats to build up the repertoire.

In addition to application via the filled shape options, all of the effects can be applied directly to brushes via a pull down or hotkey combination which instantly produces the image processing file requester for process selection.

### Adequate

Although all the processing tools work adequately it must be said that few are in the ADPro, Image Mr or ImageFX league, especially when it comes to processing speed which in some cases takes on near ray tracing proportions. Aside from image processing, another notable is the programs multiple brush option which allows up to nine brushes to be used simultaneously.

A small figure nestled among the default pen sizes allows switching between brushes – a process that can be achieved far more gracefully via the numeric keypad.

Although PPaint is a little lacking in certain areas, printing isn't one of them. In fact above all else PPaint hard copy has to be one of the strongest selling points of the package.

A little earlier, the big guns of image processing had their superior special effects held up as a benchmark. However the power of the big three don't come cheap and as far as PostScript output is concerned, PPaint more than holds its own.

When the printing option is active



*Good old Sonic showing signs of serious dithering*

you're presented with both standard and PostScript options, the latter of the two providing just about all your hard copy could ever need. As you'd expect there are positive and negative options plus the ability to output a mirrored image.

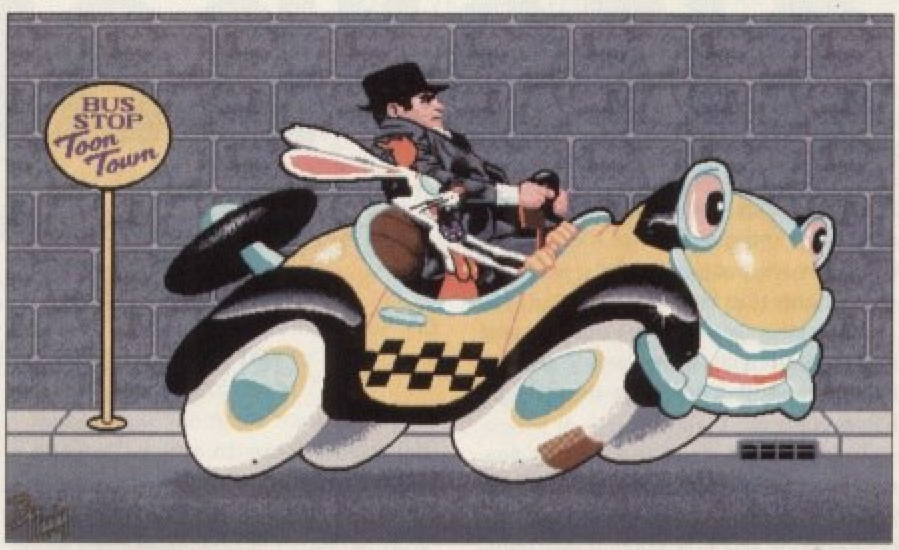
Below this initial selection await the DPI and LPI figures, a set of 16 spot settings, plus togglable output which sends your creations either direct to a PostScript printer, serial, parallel and perhaps most important of all, as a file which can then be imported into the DTP package of your choice.

As the DTP fans may have guessed, an EPS option is also included along with crops and manual feeds plus optional compression.

### Processing

Like the basic controls, colour processing is equally well catered for with CMYK, CMY and grey output plus UCR and GCR definition and lest we forget complete control over separation angles – phew...

As you'd expect, standard printing is just as impressive with well thought out page layout options adding the icing to a print repertoire that can't be matched by any other program which comes even remotely close to the PPaint asking price.




*Two famous faces on the move, but alas no way to animate*

### The full picture

**With one thing and another Personal Paint adds up to something of a mixed bag. Its affinity with the PC will be an attraction to many with support for Crypt, GIF, PCX, C and of course ILBM file formats, allowing very easy file transfer between machines.**

**As you can see from the example images, even a 256-colour picture can be pretty impressive, although it must be said all the examples have been very carefully chosen to get the best from the available range.**

**Obviously the lack of HAM and animation has to be a turn off. If you want to access PC graphics, import your creations into DTP software or print direct to a PostScript printer, PPaint certainly has its uses.**

**In short, pretty good but there could soon be better software available as the influence of the AGA spreads into the market.**

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# The 24-bit alternative




*A 35mm 24-bit spectacular, cheap at half the price!*

## Paul Austin gets some help with still frame recording, and sizes up the cost of getting your artwork into print

When Ham8 hit the scene many so-called expects began busily nailing the coffin shut on the profusion of 24-bit boards. As time passed it became painfully obvious that, although a massive improvement on the HAM of old, Ham8 wasn't the be-all and end-all as many had hoped.

First and foremost, fringing is still a factor which in effect means the format is near useless as a backdrop for titling or Scala-style presentation – although it must be said that the 256 colours offered via the AGA do a great job in such situations.

On the animation side, Ham8 again has its limitations and no matter how much tweaking ensues it still won't outperform old-style HAM when it comes to playback on similar spec machines – even when identical resolutions and interlacing options are applied.

To be fair to Ham8 there is a ray of hope in the form of the new anim8 format which is about to make its debut within ADPro 2.2. Although the existing Anim5 format is ideal for Workbench 1.2/1.3/2 it obviously wasn't designed with the AGA and 32-bit architecture of the A4000 and A1200 in mind.

The argument is that with the arrival of Anim8, AGA machines will finally start to achieve the 50fps rumoured at the release of the A4000.

To be honest I'm more than a little dubious that, even with the assistance of the new anim format, hi-res Ham8s will ever animate quickly enough and in a commercially viable resolution. As ever, keep a close eye on Amiga Updates for more details on Anim8 and the new ADPro.

In order to unravel the mysteries of still frame recording, 24-bit trannies and all things video-esque, where else can a self-respecting journo go than Alternative Image – the home of the idiosyncratic "Mad dog" himself Henri Bujko, the man behind more Amiga animations than most people would care to remember. Joking and silly names aside, Henri's company Alternative Image are one of the precious few firms who actually create with the Amiga rather than box shift.

After the obligatory coffee and exchange of insults, it was time to unearth the mysteries hidden under the straggly hair of our hero.

To start we'll cover the various dos, don'ts and expenses involved with still frame recording and follow up with a detailed look at 24-bit printing and transparencies. For many, animation is the biggest attraction of the Amiga with its general artistic prowess dwarfing the opposition for both price and performance.

Alas, as you're probably all too aware, to achieve 25fps in a video resolution – 736 x 580 – means single frame recording is often the only way, with perhaps the only exceptions being anims which make the artistic compromise of limited movement.



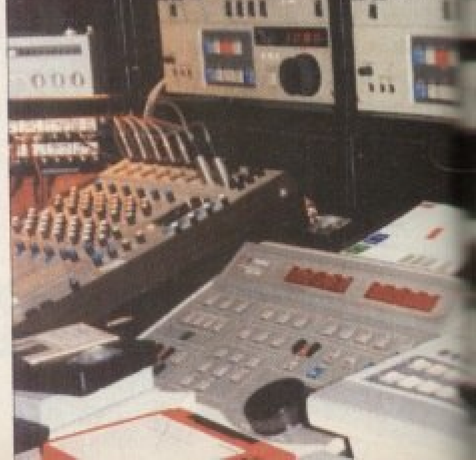
*A glance at just some of the hardware that makes serious animation so expensive...*

For example you could use a static camera position with only a small area of movement between each frame. However even with these restrictions it's unlikely you'll attain speeds approaching 25fps unless you're running on a particularly powerful Amiga displaying lo-res interlaced HAMs/Ham8s or DCTV images employing three-bit planes.

So video spec animation is at best a difficult undertaking, but if single frame is indeed the only option, how can we mere mortals get in on the act?

If you're planning to set up a single frame system of your own there are several essential items on the shopping list, first of which is a suitably well-blessed Amiga...

Obviously if you're planning to go the whole hog and are willing and able to invest in suitable recording equipment, 24-



bit images are likely to be your preferred format. Assuming that's the case here's the financially spine-chilling list of essential and preferred hardware.

On the Amiga side, an accelerated machine is really a must – with at least 4Mb of RAM and a suitable 24-bit board. Although not strictly essential for the laying down of images onto tape, they have to come from somewhere, and with files – 24-bit or otherwise – running into the hundreds or possibly thousands, generation time is a big factor.



*The heart of the system. Good old Simpatica does the business*

Aside from the machine itself, control software for the recording process is essential. On that particular score there are two affordable options.

The first is Personal SFC – an American import retailed by those affable chaps at Amiga Centre Scotland. Not surprisingly, considering Alternative are one of the UK retailers, Simpatica – the second option – is Henri's particular choice. As you can probably imagine, both packages have their merits, which incidentally will be explained in full as both systems go head-to-head in a coming issue of *AC*.

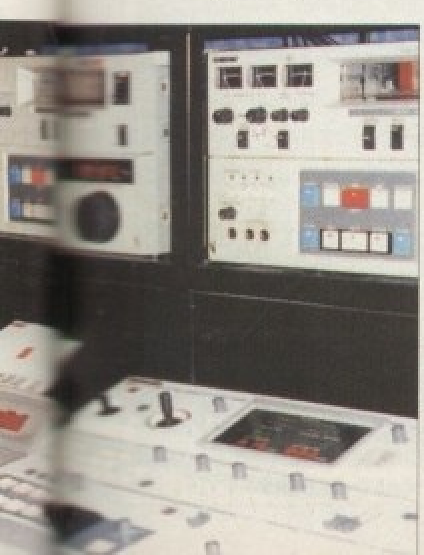
Because of the "feature in the making" I won't go into detail but in simple terms the basic difference is that Simpatica uses a control track and SMPTE while Personal SFC employs SMPTE alone.

In a nutshell, the difference means that although slightly less accurate and flexible than SMPTE, the control track option offered by Simpatica can work out considerably cheaper.

This is primarily because the software and connections are cheaper to start with and that unlike Personal SFC, Simpatica does not necessarily need a timecode generator/reader to operate.

In other words, if your edit/recorder doesn't come with a built-in SMPTE generator/reader you'll be forced to invest an additional £800+ for a standalone SMPTE generator in order to sync the Amiga, Personal SFC and recorder together.

If the prospect of the necessary Amiga and control software sends a financial shiver down your spine, the cost of even the cheapest single frame VCR will chill you to the bone with even the cheapest S-VHS Panasonic retailing at between £2,500 and £3,000.



*The cost of the cheapest single-frame VCR will chill you to the bone*

It must be stressed that any prospective buyer must ensure the VCR is a edit/record unit and not simply a standard player as these are effectively useless for single frame applications.

Assuming you're now kitted out with a powerful Amiga, control software and VCR, it's just a matter of time and talent before you'll be up there with the best of them.

> *If you've got as much chance of affording a single-frame system as I have, don't despair!*

Right, if you've got about as much chance of affording a single frame system as I have, don't despair! There is an alternative, especially if you only occasionally require single frame output.

Being enterprising young scallywags, Henri and Co are more than happy to come to your artistic rescue and put your images onto tape for you – for a small consideration, of course...

On average the single frame recording option will set you back £100 per 500 frames which translates into 20 seconds of animation recorded on Hi-Band SP tape which can then be copied onto VHS and S-VHS on request.

Obviously with the average video size image approaching 1Mb or more, transferring files numbering into the hundreds isn't exactly straightforward.

In an ideal world a Syquest removable hard disk would be the perfect solution but for most of us floppies are the only practical option with perhaps Jpeg compression squeezing the best out of the available storage space.

Image formats are of course another consideration. Although Alternative will happily accept any format, all images going to tape will have to be converted to IFF24s at some point, as this is Simpatica's default file format.

With this restriction in mind you could save some cash by supplying your artwork in a "hassle free" format. If a lot of image processing and man hours are required prior to recording, don't depend on the 500 frames for £100, as this is almost certain to increase.

## Static statistics

If still life is more to your taste, Alternative can again come to your artistic rescue by putting your creations in print. Although on-screen imagery is great for the occasional look it can never match the impact a framed picture has on the usually disinterested bystander.

It's a strange thing but if you show an image on-screen most people will utter the usual "oh that's nice, smashin', lovely, doesn't it do anything then?".

However if you show the same image blown up and sitting in a classy frame, the same person will invariably be utterly gobsmacked and insist that it was either bought or pinched from someone else. Strange, the effect a glossy print can have on the average punter!

As far as output and cost are concerned there are quite a few alternatives, the cheapest of which is to output via slides using the Polaroid palette system which allows any standard Amiga graphic to be output as a none pin registered 35mm slide.

The only restriction is that slides can only be produced from old style Amiga images – excluding extra-halfbrite and overscan. Prices vary quite dramatically depending on bulk but at worst a single slide will cost £11.75 while 20 and above will set you back just £2.35 a time.

If anything short of 24 bit simply doesn't cut the proverbial mustard, output via an Alternative pin-registered 4000 line 35mm trannie could well be the one for you.

Or you could go the whole hog and splash out on a 5 x 4in 4000 line pin registered spectacular retailing at a staggering £117.50 a time – as opposed to £14.40 for the 35mm option.

Obviously the 5 x 4ins are for professionals who require the ultimate and are will to pay for it. The 35mm alternative, however, is well within the reach of most. But for commercial use it's not advisable to go much higher that an 8 x 10in from a 35mm trannie.

Now before hordes of people write in with countless "I've got 35mm prints the size of the Post Office Tower and they're smashin'" stories, I'm working on the pretext that the end results are heading for the glossiest of glossy magazines who expect completely jaggie-free output with extremely well defined edging within the image.

However, if the end results are merely for personal or portfolio use, 35mm pictures can be blown up as high as 20 x 16in and still provide very acceptable results. At such a size you'd expect horrendous jaggies but surprisingly enough this isn't usually the case, as trannies by default tend to add additional anti-aliasing which means big prints tend to look softer rather than jaggier.

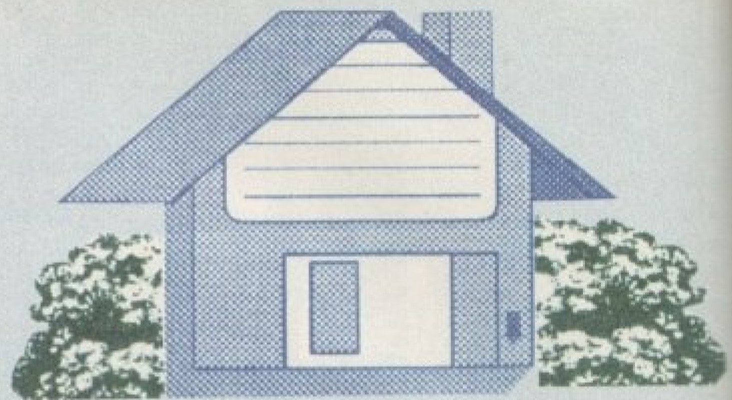
If you fancy you pics as trannies, Alternative will do the complete process for you, producing the trannie, developing the print and even framing the finished results. For this complete service, £100 will get you a 20 x 16in framed picture from the original 35mm or a 16 x 12in version complete and ready to hang for £50.

Alas that's about all that space will allow so it only remains to thank Henri and all those at Alternative image for the copious amounts of coffee, sandwiches, advice and of course valuable time spent teaching yours truly the intricacies of still frame and static Amiga art. Cheers ya buggers...

AC



**For more details on still frame and statics contact:
Alternative Image on:
Tel 0533 440041
Fax: 0533 440650**



# Keeping up with the Joneses

**With the introduction of the AGA chipset, CDTV users may feel left behind graphically. Julius Alexander looks at a Commodore-approved upgrade path to thousands of colours**

The CDTV is an unbelievably powerful system, but floored in one key area. No matter where you look the graphics capabilities of personal computers are improving at a dramatic rate.

Yet the CDTV with its old style Amiga graphics chips has been left stranded, high and dry. If you're a CDTV user you've probably looked at the AGA chipset of the new Amiga and wondered what the future will hold for you. Well rest assured, Commodore aren't about to forget you. Working in close collaboration with a developer, they are set to unveil the Advanced Video Module.

The AVM will take the CDTV back into the mainstream of the Amiga community. In one card, AVM enables your CDTV to display thousands of colours at once.

Where previously pictures were composed of just 32 colours out of a possible maximum of 4,096, AVM raises this to more than you can physically see! And it gets better still – it's not just still pictures that are enhanced, but also moving (CDXL/FMV) sequences!

## Praise

The AVM card is actually based on an existing Amiga product, the famed DCTV. This peripheral, which gives normal Amigas similar capabilities to the AVM-enhanced CDTV, received widespread praise in the Amiga press and I'm pleased to say that the CDTV version is just as good.

Quite why the name was changed is anyone's guess – one thing's for sure, CDTV DCTV would have been one hell of a mouthful!

Fitting AVM involves opening the CDTV and slotting the card into the internal expansion slot. The CDTV expansion slot, for those not already aware, has a removable back panel that allows cards to add new ports to the back of the CDTV. And this is just what the AVM does. Once fitted a new composite output port is provided, but more of this later.

Also coming from this back panel is a cable with a through connector at the end. This connector is plugged into the RGB port, while still giving a through port! This technique allows the AVM hardware to see everything going through the RGB port without preventing its use.

AVM-compatible software makes subtle changes to the pictures sent by the CDTV. These doctored pictures are then processed by the AVM hardware and expanded into a "full colour" picture and in turn output through the new composite port. Hence the need to capture the output first with the RGB port adaptor.

The results once fitted are spectacular. Supplied with the preview model were a number of sample programs which showed off the extra colours. If the first AVM-compatible games that appear are as good as these demonstrations the AVM card has a rosy future!

Unfortunately there are drawbacks in using composite rather than RGB output. Firstly, most TVs don't have a direct composite input. If you've got a video you may be able to go through the video and then on to the TV, but for those without a video... alternatively many Amiga monitors do have a composite input.

Another problem is that when using a monitor you will immediately notice a considerable drop in picture quality. Composite pictures are not as sharp as RGB, with the result that users of AVM will notice a dramatic decrease in picture quality compared to normal Amiga monitor displays.

Having said that, this loss in quality is easily made up for by the increase in colour. In fact, within minutes you'll quickly forget the difference even exists. The vibrancy that the extra colours bring make any loss easily worthwhile!

Having installed the AVM card all you'll need to is the software to support your new gadget. This is where the single biggest problem of the AVM card lies. Yet it's also the biggest potential opportunity for not just this card, but the future of the CDTV.

## Extra codes

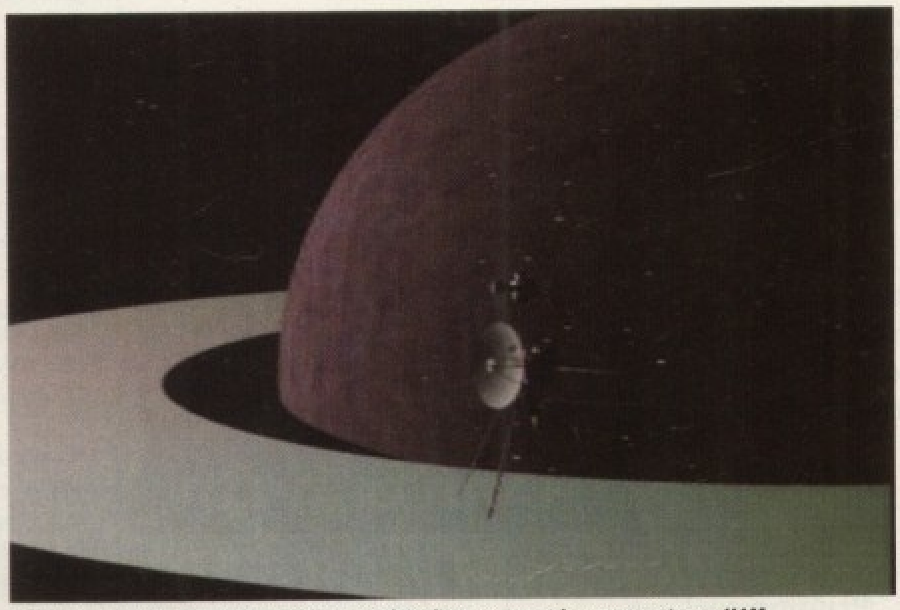
Only software written especially for AVM will be able to use the extra colours and capabilities of the card. This is because only software that is designed for AVM will have the extra codes necessary to generate the extra colours.

Unfortunately this means that, for now at least, there is little or no practical use for having an AVM card. However, and it's a big however, Commodore are behind this card, and Commodore hold more than a little sway among the CDTV developer community. As such you can expect to see a lot of future CDTV titles that will support the card.

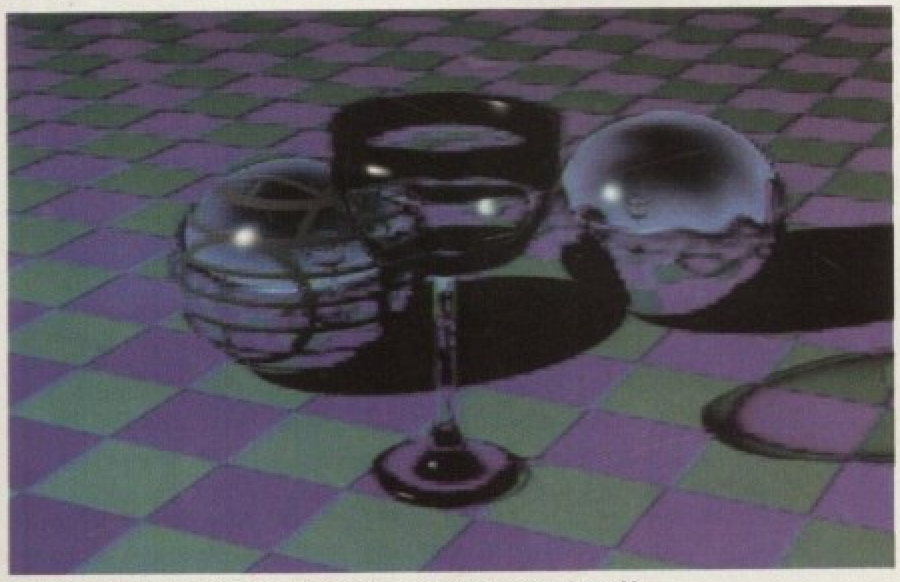
If the games developers start incorporating AVM multi-coloured pictures in their games, CDTV will have a library of CDTV software really worth having! Imagine what a company like Psygnosis with their graphical prowess will be able to with a pallet of millions...

This why Commodore are so eager to see the AVM take off. Philips CD-I already has trouble competing with the CDTV's graphics capabilities – fit CDTVs with AVM cards, and Philips will have a real problem on their hands!

In short, the AVM card will do wonders for the CDTV as a system, but for individual users, it currently holds little attraction. A case of one small step for you and me, one large step for CDTV!



*DCTV-like graphics may not space you out, but they are a vast improvement over HAM*



*Now CDTV owners can create and view full video colour rendered graphics*

**SYSTEM ESSENTIALS**

RED = Essential YELLOW = Recommend

1 Mb RAM | Normal monitor | CDTV

**The bottom line**

Ease of use = 9
Implementation = 9
Value for money = n/a
Overall = 9

Supplier: Chart Screen (UK)
Phone: 0425 475515
Price: TBA

# Monitor moaning? Interfaces ill? We're here to help!

Q&A

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**Write to ACAS, Amiga Computing, Europa House, Adlington Park, Macclesfield SK10 4NP**

*PS: Save your SAES – we can't reply personally*

## SCSI or IDE?

I am the proud owner of an incredible and awesome A1200 complete with a 1960 monitor and an 80Mb hard drive. I must say, the fast hard drive (850k/sec) and the A1200 sure put my old A500+ to shame! But on to my question.

I purchased my hard drive separately from my computer and installed it myself (no warranty speeches, please). The hard drive is a Conner 80Mb, revision 2.37. I bought it from Hobbyte, and they gave me an A1200HD official Commodore install disk, v3.0.

After I installed the drive and turned on the computer, I booted from floppy with my copy of WB, and when the screen came up there were no icons at all for the hard drive.

I booted with the install disk and it did not recognise the drive. I went to Define New and there are only two choices SCSI or XT and not IDE. I clicked on SCSI, and then on the read Config from drive gadget, and it read the drive and all the specs. After that everything went well.

The problem is that the computer thinks it is a SCSI device. What is the problem? Am I doing something wrong with the install disk? Everything works extremely well, but I am worried that I might damage the drive or the computer somehow, if it keeps thinking it is a SCSI device.

The hard drive is currently at SCSI address 0. Could it be that I have a SCSI interface?

*Luis Reich, RAF Alconbury*

*We at AC recently had to install a hard drive into an A1200 and encountered exactly the same problem as you did. After speaking to Commodore I was told that the Amiga A1200 circuit board contains an IDE interface but the Amiga itself thinks this is a SCSI interface.*

*Apparently this is because the chip which talks to external devices on the A1200 only has addresses for SCSIs and not IDE drives.*

*This means that telling the install software that you have a SCSI drive instead of an IDE one will do no harm whatsoever.*

*By the way the software your dealer gave you must be from the A4000 because as yet Commodore do not have an official Install disk for the A1200.*

*Soon after you read this several dealers will be offering official Commodore Hard Drive upgrades, this will enable you to have a drive fitted without invalidating your warranty.*

## New user

I have just bought my first ever Amiga, an A1200, and so far have found it to be a fantastic machine. Perhaps because I have never used the WIMP system before, or any WorkBench other than 3.0, I have found it quite easy to get into using the system and finding out what does what.

I do however have a few questions which I hope you can answer for me.

1. Is there anywhere with a list of A1200-compatible software yet? (serious and games)
2. What, in layman's terms, would the fitting of fast RAM via the PCMCIA slot achieve?
3. Is there anywhere that I can get an internal hard drive fitted without losing my five-year warranty.
4. Why is there a trap door at the back of my machine instead of the metal strip which was referred to in your review.

*S Dolphin, Lossiemouth*

*As yet no-one has released a list of compatible software for the A1200, but from what I have heard the problems with incompatible software are very small indeed. It's best when purchasing software or hardware to ask the supplier if the product is compatible with the A1200 first.*

*Fitting fast RAM into the PCMCIA slot on the side of your A1200 will increase the total memory you have available this will give you machine a larger working area to play with and generally improve your machine's capabilities.*

*PCMCIA cards are only 16-bit and with your machine being 32-bit this will slow you machine down, so it's better to upgrade your memory with 32-bit memory which goes into the expansion underneath your machine.*

*By the time you read this quite a few companies will be offering official Commodore hard drive upgrades which* ➤

## Modem mysteries

I own an A500, and soon an A1200, and one of my friends owns a IBM with a modem, so he tells me. My question is – if I bought a modem for my computer, would I be able to link up with my friend with the IBM? If so, how, and would I need to buy a special modem?

Also as I will be soon upgrading to an A1200, is this a good computer for use with modems? Are there any good books out for the Amiga on comms?

*Andrew James, Northampton*

*The simple answer is, yes, you can quite simply connect your Amiga to a modem and talk to your friend's computer, even though the two computers are of different types. When computers are talking through modems they all use a common language.*

*You will need to get hold of some good comms software though, which includes the ability to emulate terminal communication. You should try some of the PD libraries who advertise in this magazine.*

*As for a good book on Amiga comms, you can get virtually any book on comms, as it doesn't have to be Amiga related.*

## A1200 install disk needed

The CoverDisk which included Protext is probably the best value for money yet on any computer magazine and this is certainly the best wordprocessor I have so far used on an Amiga.

I have however encountered a problem in getting the program to load from the hard disk on my Amiga A1200, and was wondering if you can offer some assistance.

I have used the hard disk installation script to copy all the files successfully to my hard disk and have assigned the directory correctly but on loading from Workbench I get the message "Failed to open window 1920 * 256".

The same message also appears if I try to load the program from the floppy disk from Workbench but not if I boot directly from the floppy. is there a missing file that hasn't been installed correctly?

*Barry Cook, Leeds*

The problem you are experiencing is not actually down to the CoverDisk but your Workbench. We have had several phone calls about this very problem, and after some trouble found the answer.

When you purchase an A1200 you do not get a hard drive install disk – this is due to be released by Commodore any day now. So it appears that people are formatting their hard drives and then simple dragging all their Workbench files from floppy across to the hard drives.

This procedure does not install the Workbench correctly and then leads to all sorts of complications later on. What we at AC did was boot up our A1200 with the A4000's install disk. This worked perfectly and now our A1200 can load Protext directly from the hard drive.

Obviously if you don't have an A4000 just lying around for you to scrounge the install disk from then you are going to have some trouble correcting this problem.

I suggest you take your machine back to where you got it from or if you purchased your hard drive separately contact the suppliers and ask for a suitable install disk – most reputable companies are supplying the

*will not invalidate your warranty. But do make sure they are Commodore approved.*

*And finally the A1200 we reviewed had a plastic trap door underneath and a metal blanking plate on the back. The machine you have just has a different blanking plate fitted there is no actual difference internally.*

AMIGA COMPUTING Q&A ADVICE SERVICE

## Clip Art

I would like to make a comment about the new Amiga Radio station on the Sky Sports channel. The one I heard was issue 3 and to be honest with you it was a bit basic.

For one I have owned an Amiga for only three months (I've got a A1200) and it was getting repetitive, so what's it like for people who have years of experience with an Amiga?

Being fair though, a good 20 minutes of the 30 minute program was devoted to hard drives and I haven't got one yet, but I listened to it anyway. The best part of the program and what makes it worth listening is about the last 10 minutes which is the news feature – it was brilliant to be up to date on the news of the Amiga.

But putting all that aside it's brilliant to have a radio program devoted to Amigas and I'll stay a listener.

Now for a completely separate issue. I would like to use my Amiga for compiling clip art on disks but I don't know how to. I was intending to buy a hand scanner and a genlock so I could get video pictures and pictures from books and so on.

But I read somewhere that you could buy a second-hand security camera and it would work the same as a camcorder does with the computer. If this is true would it cost me more to set up that system instead of buying a colour hand scanner and so on?

Finally, what software do you need to compile clip art? I have heard that there is some available on public domain but which is the best?

Cristian Ingram, Southport

*First of all, genlocks are used for overlaying computer graphics over video pictures and not for putting video pictures onto the Amiga.*

*You're right you can buy a security camera and then digitise pictures but you will also need to buy a digitiser. These cost from around £69 upwards depending if you want real-time colour digitising – although if you use video pictures you might run into copyright problems.*

*As for compiling your clip art onto disk you can just use say DPaint to load the art into and touch up, then you simple save the finished work out onto a fresh disk.*

*Disks which usually contain collections of clip art are not self booting, so it's a simple matter of formatting a disk and then just transferring the files you want.*

## Modems

I have recently thought about buying a modem for my computer. Could you recommend a certain model that is relatively fast, and won't cost too much? I am looking for something that will cost around £70-£130.

I need it for home use, not for business or anything. I would like something that would enable me to get in touch with people all over the UK, not necessarily the rest of the world.

I would like to be able to use a bulletin board. I read somewhere that the Supra 2,400 is supposed to be good, it only costs £70-£90 and I was wondering if that was because it was no good – what is your opinion?

Is the Supra 2400 or 2400+ compatible with the CDTV, if not what is? Is it expensive to use a modem once it's bought? is it cheaper than a phone call? and how would I get it installed in my home? Would I need a separate line to the normal telephone line, or would it work on an extension or something?

Sheriff Al-Om, Camberley.

*Firstly the Supra 2400 only runs at 2,400 baud rate which is rather slow – you should be aiming for around 9,600 baud rate as the faster the baud rate the faster you can download files.*

*A good modem in this speed range is the Supra-Fax Plus which you can pick up for around £130-£160. This modem is also capable of sending a fax.*

*All modems should be compatible with the CDTV but you will have to make sure that the comms package you use is compatible with Workbench 1.3. If you have trouble finding a suitable comms package then try some of the PD libraries listed in this issue.*

*As for cost of running the modem this depends on several factors like how fast your modem is, how long you are on-line for and what time you make the call.*

*This is why it is better to buy a faster modem as this will save you far more in the long run than the cost of a more expensive modem.*

*Installing a modem is just as simple as plugging it in to you existing phone socket, but remember that if you unplug you phone to do this you want be able to receive normal phone calls, so it's best to get a double socket adaptor.*

*If you use your modem only in off peak periods this also helps to reduce you phone bills.*

*When you use your modem it costs exactly the same as a phone call to the area you are calling so it's best to stick to bulletin boards in your area.*

*Also some boards charge for access to certain areas on their ,although there are quite a few that are free as long as you upload files as well as downloading files.*

## Speech

I am writing to you to raise a query over your recent publication *Mastering the Amiga*, free with the February edition of *Amiga Computing*. Unfortunately this book has raised more questions than it answered for me, perhaps you can help.

I have just bought an Amiga 1200. I am new to computing and saw your free guide as a useful to the poor documentation provided by Commodore. I was amazed to find that "all" Amigas have a speech synthesiser and all I had to do was type in a few Amiga basic commands or shell commands.

Unfortunately Commodore did not see fit to provide me with Amiga Basic for the A1200. OK I thought I will use shell but the "narrator.device" is not in the devs directory of my WorkBench 3 disk. Nor can I find it on the Extras Locale or Storage disks provided, though I admit I hardly know how to look for them other than "showing all files" from the pull down menus.

So the first chapter of your book says I can make my new computer talk, and I bloody well can't! perhaps you can advise me.

*A Clitherow, N Devon*

Yes you're quite right, you don't have the narrator.device or the Say program which you get with WB 1.2, 1.3 and 2.0. We tried copying the device from one of our WB 2.0 machines to the A1200 along with the say program but it failed to load.

It appears that Commodore have left the speech facility off the WorkBench 3.0 machines – but you're not missing much.

## WB 3.0 in 256 colours

I owned an Atari STE but only for a short time – with the lack of software I had to have an Amiga. I bought an A600 and it had a much clearer picture and better sound.

Then the A1200 came along and with those 256 colours it was out with the A600 and in with the A1200, and a fab machine it is.

My question is, would a Philips CM8833 Mk2 or Commodore 1084 display 256 colours? At the moment I'm using a Toshiba with a Scart RGB input and the picture is very good. Would the monitors I've mentioned be better than the Toshiba and would they display the A1200's 256 colours? Thanks.

I only play games and I haven't had many problems with loading games on the A1200

Mr P Cawser, Birmingham

*A lot of people are getting extremely confused about the A1200's 256-colour mode.*

*Well the answer is quite simple – you can display 256 colours in any resolution but you do need certain types of monitor to display certain resolutions.*

*If as you say you only play games then the two monitors you mentioned will be OK, this is because when games arrive which use 256 colours they will not be in the very hi-res modes due to the reduction in game speed.*

*If you wish to start doing graphics work then you're better of getting a multisync monitor which would enable you to display all but two display modes. Cheap multisyncs start from around £250*

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# AMIGA COMPUTING





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# Monitor madness?

**If you're after a monitor for your new A1200, things might be more difficult than you imagine. Andy Baker assesses the problems and offers some advice**

There you sit, with your brand new A1200 happily using a television as its display. But all is not well with your latest credit card basher – while a TV may be OK for games, it just doesn't hack it for anything serious.

Your text slowly wobbles, colours blur and graphics snake back and forth. All symptoms of a TV display. The most popular solution is to nip down to your local dealer, inflict further damage on your credit card and buy a monitor.

With A500s and A600s this was easy – the resolutions that were available were catered for by several low cost monitors.

## Kitchen syncs

Now you may have thought buying a monitor was fairly simple. After all what can possibly be difficult about using a monitor? Well there are difficulties and it's all a question of syncs. Nah, not kitchen syncs, but the syncs used to generate the picture.

Video signals include two synchronisataion signals (vertical and horizontal) that tell the monitor how quickly the screen is drawn. The horizontal sync rate, measured in kHz, in turn affects the resolution displayable, lower horizontal sync rates produce lower resolutions.

In simple terms, imagine the sync rates to be the gears of a car. You can't exceed certain speeds without moving up a gear. The lower the sync rate the lower the resolutions, or first gear for low speeds, And so on.

Now think about how difficult it is for a car manufacturer to add new gears to a car. The more gears you have, the faster you can go but the cost also goes up.

The same applies to monitors. On cheap single scan monitors – ie those with only one speed – you are limited to lower resolutions.

## Multisync

Typical VGA monitors, which are triple syncs (ie they have three set syncs) can display many more resolutions, while multisync monitors (almost any sync rate) can handle an even greater range.

But how does all this affect their use on the Amiga 1200? Well the standard lower resolutions of the Amiga are supported by the normal Philips 8833 and the Commodore 1084S.

These are single scan monitors and being such can't handle the higher resolutions of the new AA chipset. For these you'll need a VGA-type monitor. And this is where the problems start to creep in.

While these VGA monitors are triple sync and thus able to display a variety of different resolutions, they typically don't need a sync low enough to handle the Amiga's lower resolutions. Hence you have either two monitors (!) or have to put up with just the lower or higher resolutions, but not both...

And even if you opt for the single monitor solution – which leaves you missing out half the graphics potential of your Amiga – life still isn't straightforward.

You'll run into some interesting problems. For instance, say you opt for a VGA monitor. The Amiga's start screen is automatically in the lower resolutions. So you'll need to tailor the startup sequence to change resolution to the higher modes before you can see anything.

But how can you do this if you can't see the screen on your monitor in the first place? Great! You've just bounced several hundred quid off your flexible friend only to find you need a television or another monitor before you can start using it!

Luckily it's not all that bad. Unknown to most, there is a solution that allows you to use the lower screen modes on a monitor that shouldn't technically be able to handle them.

Buried in the Screen Modes draw is a soup res option which takes the lower resolution modes and increases their horizontal frequency.

This is basically a trick on Commodore's part, and allows the VGA monitors to display the Amiga's lower resolutions.

It's not a great solution, and doesn't always work. You can't for instance use it with most games as it's a software patch and most commercial games insist on the Amiga being re-booted, thus losing the setting.

Alas it's the only solution at present and definitely a kludge on Commodore's part. The only other solution is to buy one of the seriously expensive and also rare monitors that have a wide enough range of syncs to handle all the Amiga's resolutions.

Commodore are rumoured to be working on a new monitor which will offer this capability while also being fairly low cost. What this space for details, *AC* will have the news first!

AC

> *Your text slowly wobbles, colours blur, graphics snake back and forth*

### Beat the specs!

When looking for VGA style monitors, check that the horizontal scan rates (kHz) support the resolutions you want. Most VGA triple scan monitors can only handle the VGA resolutions and not the Amiga resolutions. For all Amiga resolutions you'll need a monitor that can handle horizontal scan rates from 15kHz to 75kHz.

If you just want normal Amiga Productivity mode or a flicker fixed display you'll need a monitor that supports a scan rate of 31.5kHz., typical rates being listed on the right

| Resolution | Horizontal scan rate required |
|---|---|
| Lower Amiga modes | 15kHz |
| 640 x 480 | 31.5kHz |
| 1,024 x 768 | 35kHz |
| 1,280 x 1024 | 75kHz |






# Pixel performance

## Paul Austin drools over the GT–6500, a scanner that sounds like a Ferrari, performs like a Ferrari but alas doesn't look quite as good on a key ring...

Do you live life in the fast lane? Are you looking for a scanner that's big enough for any occasion, a dpi that'll leave clients and friends gasping in admiration? If so the Epson GT-6500 is definitely for you.

OK, I know there are a lot of scanners about but few if any can match the performance of this wolf in wolf's clothing. As scanners go the GT-6500 ain't cheap, but as ever quality costs. In this case there's not much change out of £1,000 for the scanner plus an additional £130 for the necessary ASDG control software.

As far as control is concerned you can't ask for much more than the services of ASDG. As you'd expect from the creators of ADPro, the Art Department Scanner Controller has been designed to integrate into the overall ADPro environment.

Of course not everyone has ADPro so an additional stand-alone direct-to-disk version of the package has been included for those a little lacking in the ADPro department.

Although there are two versions, thankfully both are identical when it comes to operation. The only difference is that the ADPro loader assimilates into the ADPro environment allowing you to scan and process newly acquired images directly.

After the new loader takes its place among your existing repertoire, a quick reboot reveals a new Epson_ES300C loader lurking among your old favourites.

Although the title Epson_ES300C doesn't inspire confidence, this one loader will operate the entire range of Epson scanners including the ES300C, ES600C, SE800C, GT-6000, GT-6500 and GT8000. And of course this applies equally to the stand-alone software.

Assuming the scanner is on and all connections are complete, the software will locate the scanner and default to the preview panel ready for initial positioning.

Unlike most loaders the ES300C works along the lines of an ADPro operator with the top of the panel displaying the size and offset of the scanning area.

Below these await a togglable metric or imperial button plus the final output size in pixels – obviously this can vary considerably in relation to the chosen resolution and scan area. Next up comes the essential resolution adjuster plus yet another toggle button which switches between Keep Pixel and Keep Size.

The latter simply retains the chosen resolution no matter what the scan area while the second reverses the process, tailoring the number of pixels to the specified resolution – effectively shrinking the scan area as the resolution increases.

Beneath sits the current aspect ratio followed swiftly by yet another toggle which either fixes or frees the scan window into the specified aspect thereby locking the existing scan rectangle in its present shape. As a result any subsequent scaling will operate simultaneously in both the X and Y axis.

As for the remaining buttons, things are pretty self explanatory with options to open the scan area to its maximum A4 size plus a separate brightness control being the only notables.

After image placement and scan area are set up, all that remains is to scan for a preview and if you're happy with that, accept the present settings and move on to the fine scan panel.

After transfer to the finer side of the software things look pretty much the same but after a closer inspection the power of GT-6500 soon starts to become apparent.

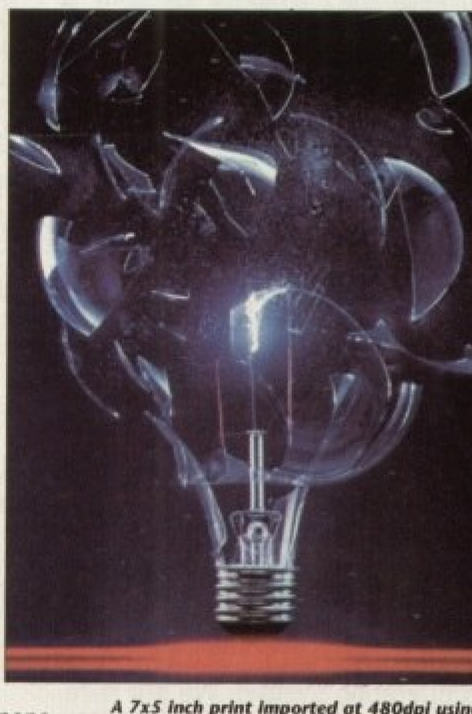
At the top of the requester a few old favourites from the preview screen make a second appearance in the form of the output pixel size in both height and width. The aforementioned resolution toggle button makes another showing, ranging from 50 to a staggering 600dpi.

Alongside this sits the scan mode toggle button which allows you to specify either full colour, grey or mono, scanned as 24-bit, 8-bit and 1-bit images respectively.

Below sits yet another newcomer in the form of the zoom button which in effect auto-scales the image between 50 per cent and 200 per cent in increments of one per cent. Although very handy for squeezing a scan into your available RAM, the scaling procedure doesn't interpolate the new image but merely throws away unwanted pixels. As a result you're generally better off using ADPro's more accurate scaling operator whenever possible.

Just beneath the zoom awaits the dreaded memory needed display which jumps dramatically as you alternate between scan modes and resize the scan area.

As the desired RAM exceeds the actual amount available the figures change from white to black with the record request topping half a gigabyte for a full colour, 600dpi, A4, 24-bit scan!



*A 7x5 inch print imported at 480dpi using 50% zoom via a 10 Mb machine. OK, so it costs, but the quality is spectacular*

Obviously nobody will ever match a request of such magnitude but it does illustrate one prerequisite of serious scanning, namely RAM and lots of it...

To use the GT-6500 effectively you need at least 4Mb and in order to really take advantage of the scanner's potential, eight to10 Mb isn't unreasonable.

For the very serious the GT-6500 doesn't stop there, as an optional transparency scanner, automatic sheet feeder and OCR can be added as required.

Perhaps the biggest compliment that can be paid to the GT-6500 is the fact that on arrival, the first reaction was one of horror at the asking price.

However after less than a hour in the sticky mitts of the *AC* team the word "bargain" was flying about like confetti.

If you can afford it, buy it, but don't forget you'll need a system that can match up. A serious product for serious people... AC

### Colour correction

First on the colour correction list comes a six position – plus or minus three – brightness toggle button, followed closely by a selection of five different Gamma presets.

Following this come four display options designed to give the best results on the specified display medium whether it be screen or paper. The options include CRT Display – alias screen display – dot matrix, thermal transfer and ink jet respectively.

For mono exploits, four halftone settings also await your command, with the Accept or Return To Preview options adding the finishing touch. Just hit the button, sit back, and marvel at what a real quality product can provide.

GT-6500 £938
Transparency scanner £640
ASDG software £129
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MiGraph OCR software TBA

GT-6500 and peripherals available from HB Marketing on 0753 686000

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*Subject to availability

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- TEXTRA 1.12. (+^). Very comprehensive text ed.

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- NOISETRACKER (-).
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### *Compatibility Chart*

- \- = Kickstart 1.3
- \+ = Kickstart 1.3 & 2.xx (A500+/A600)
- ++ = Kickstart 2.xx only
- ^ = Also works on Kickstart 3 machines
- ^^ = Kickstart 3 machines only. (AGA).
- >> 96% of all "+" titles work on A1200

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# PUBLIC SECTOR



A trio of top quality educational releases, some great animations, a dash of acid house and some stonking applications. Here's some Phil Morse prepared earlier...

The usual post-Christmas quiet few months haven't stemmed the incredible flow of PD into this office. The sheer diversity is staggering – from education to subversive literature, it seems that someone, somewhere is prepared to put it out on PD. So for a fresh pile of from the people, for the people software, read on...

## Lunchtime 3 Edward's Revenge

### Lunchtime (Amiga)

This is a highly irregular disk magazine with a crazy intro featuring some extremely dodgy Latin genus and species names, which lead up to an original, fresh and challenging disk magazine.

Gloating over the fact that nothing in their magazine has anything at all to do with computers, Edward's Revenge's compilers have put together a set of articles which – in both presentation and content – are very different from your usual user group-style magazines.

Who could resist a short poem entitled Dark Thoughts on Hamsters? Or a tale called The Further Adventures of God? When you start to read the story of Abdullah B Perkins, who comes to England to look for Salman Rushdie and ends up in what one can only assume is a mentally compromised position in the Magic Roundabout, you know that something untoward is going on!



*The opening sequence to one of the weirdest disk magazines I've ever seen*

## Dunk's DTP

### Virus Free PD, 2970

Short for Dunk's Typing Programme, this is not a typing tutor, rather a very simple and educational DTP package, aimed squarely at children.

It immediately reminded me of the Business Card Maker reviewed last issue, but with the emphasis firmly on fun! Like the Business Card Maker, it limits you to a number of simple, pre-defined layouts, giving you control over the text you input, which typeface you use, what your illustrations look like and so on. When you've designed a number of pages, you can assemble them to make a DTP "book".

Presumably, having spent time and effort designing a number of pages, it would be extremely rewarding for a child to see a book made up of his or her scribblings and ramblings.

In keeping with its young/educational slant, the program is peppered with tunes, Space Invader-style noises and friendly, informal comments.

The presentation is certainly very original – for instance, one of the menus, entitled Musical Menu, lets you select Spare Me or Yes. Should you select Yes, you'll asked whether you'd prefer pongs, pangs or pings! The major omission as far as I could tell is that you can't print a hard copy of anything you do, but you can save your files to, and load from, disk. As a practical DTP package, it's a failure, but as a well-presented, fun and educational introduction to DTP, it's the business.

## Tell the Time

### Déjà Vu L/122

No prizes for guessing the reason that this educational package exists! It starts with a very colourful, cartoon-like rural pictorial menu (phew!) which features a duck who flies rather unconvincingly to the icon for the level you have chosen to play, from one to five.

Level one, for instance, features a simple, analogue, 12-hour clock, whose hands turn for a while before stopping on a certain time, which will be on the hour, half past, quarter to or quarter past an hour from one to 12. You then select, using the mouse, a number from one to 12 for the hour, and then the correct fraction of the hour.

It's all very simple to do, all the right things happen when you're doing well (the sun smiles and shines a bit brighter, for instance) and when you've finished it congratulates or commiserates with you personally – yes, this is one of those programs that asks you for your name before you do anything.

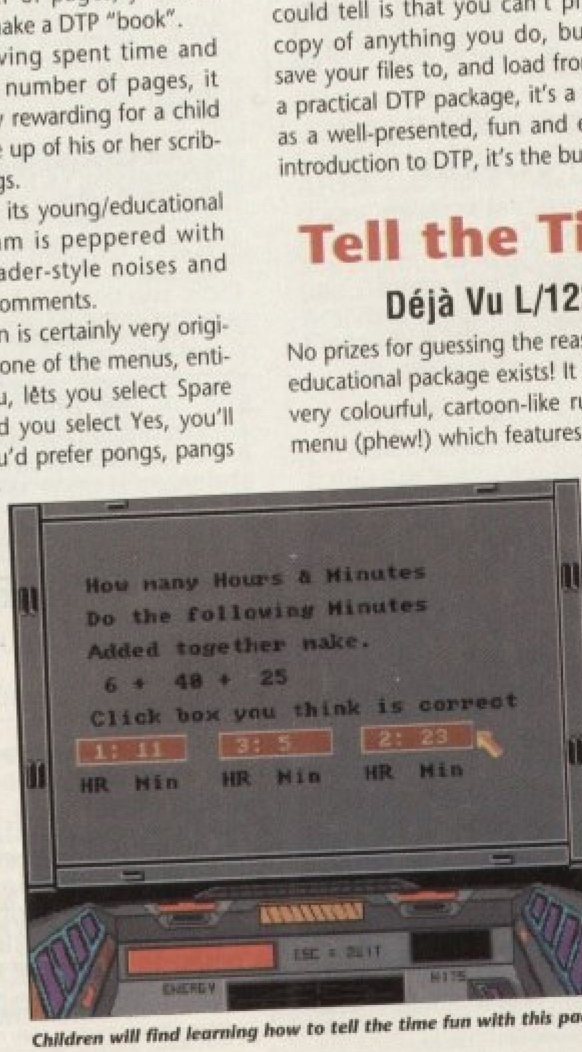
On its own this would have been a worthy little package, but the other levels conceal more, different games. Level three contains the classic "If the train left the station at 7.30pm to travel an 85 minute journey..."-type questioning, but there actually is a train, and it actually moves, chuffing out steam in a very Ivor the Engine-ish way when you get the answer right.

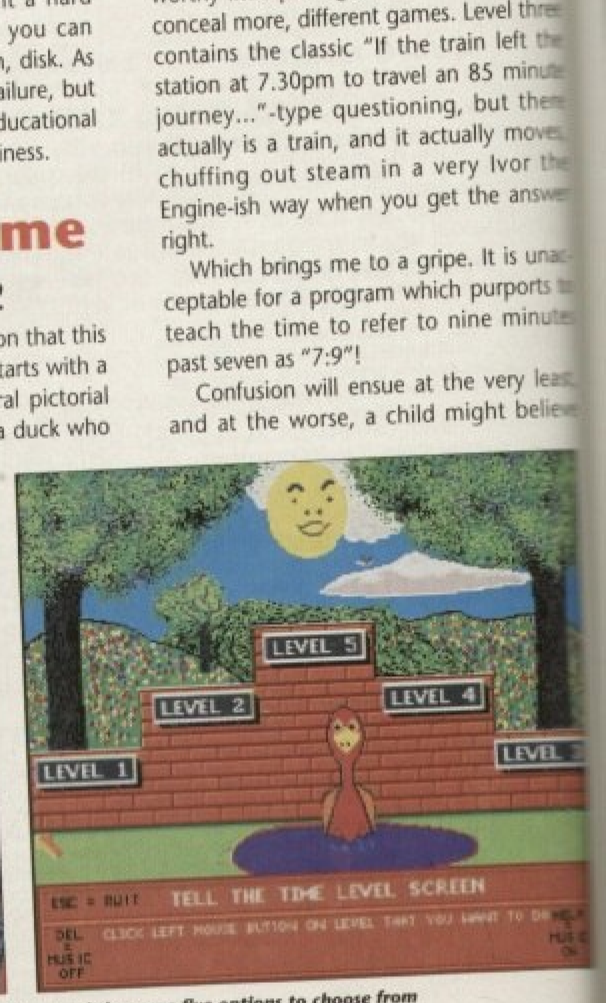
Which brings me to a gripe. It is unacceptable for a program which purports to teach the time to refer to nine minutes past seven as "7:9"!

Confusion will ensue at the very least, and at the worse, a child might believe



*Is this the first DTP program designed specifically for children?*



*Children will find learning how to tell the time fun with this package – and there are five options to choose from*

that this is how the time is written and emulate this his or her self!

Things like this must be weaned out before educational software is released. That aside, though, this is a worthy program which contains the right blend of interesting, varied exercises and pictorial/sound rewards to credit success. Recommended.

## LCD Dreams

### 17 Bit, 2356

Straight outta Australia, a compilation of four games presented with the usual nice interface, music and opening animation. However, this compilation is slightly different, because rather than repackaging other people's games, all of the games here are written by the same pair of programmers. But what are they like?



*Nice graphics but unbelievably simple gameplay*

Well, Octopus involves you trying to... no, it's not with even telling you, because, due to its incredible simplicity, it is totally unplayable. Not an auspicious start.

Parachute – an equally simple game which would appeal to the very young – is, although similar in design, a lot more playable, involving you catching in a boat a number of parachutists who are jumping from a – presumably stricken – aeroplane.

Fire Attack and Oil Panic follow the same course, with varying degrees of success. These games actually reminded me of those early LCD hand-held arcade machines – all right for what they were, but hardly likely to engage you for any length of time.

As I say, a couple of these efforts would be quite good for children, but that's about the extent of it.

## Yippee!

### Déjà Vu, L/119

The trick with really good educational programs has always been to teach something useful while fooling the child that he or she is doing something fun – a unique combination which computers have arguably embraced more than any other teaching med ia of recent years.

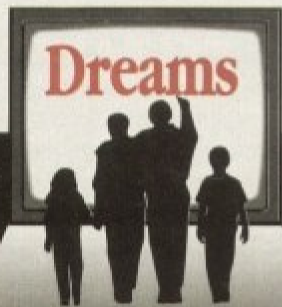
This program continues that tradition in fine style, offering a truly compelling platform-style game which on its own is quite enough to keep anyone (ie me) amused, before the educational bit has even kicked in.

The game's world is, in fact, a jungle, complete with waterfalls, trees, rockfaces and general wild jungle greenery. You control a rhino who is extremely well drawn and animated. He must be, indeed,

➤



*Yippee! – one of the best educational games I have ever seen*



## Dreams and Visions

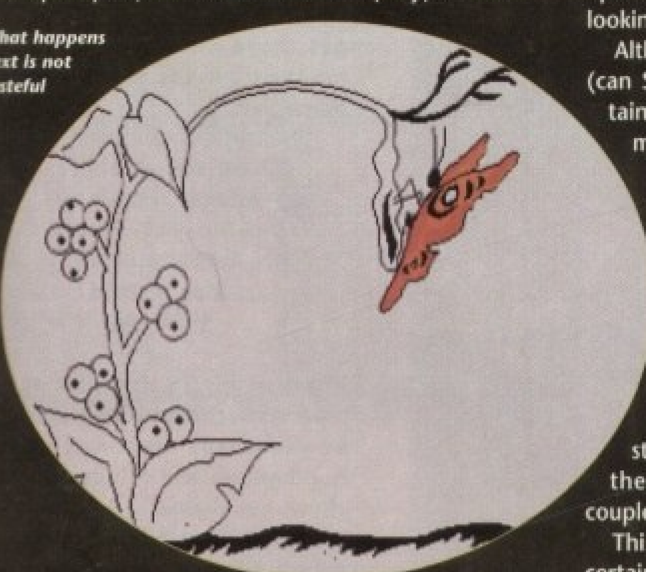
Varied and variable are certainly the best two terms for this month's collection of demos, slideshows, animations and all things hands-offy from the PD sector.

And they don't come much weirder than The Land Rover Slide Show Part 1 *(Mike Hillerby)* which features an assortment of pictures of the farmer's favoured mode of transport, all digitised from original photos using The Complete Colour Solution.

What could have been an extremely sad, second-rate idea is, in fact, quite a curiosity, mainly due to the high quality of the scans used and the interesting models and angles of the original photography. Mike includes an advert for his digitising service, too, the cheeky, er, blighter. Madcap stuff indeed, and only part one!

Less accomplished, I'm afraid to say, is Crazee Gloo *(Cacophony PD)* which features three (very) short cartoon animations starring the current in-vogue style of computer-generated character – a squidgy, New Schmoo-style number.

This Silly Putty-esque creature is shown being born (from a glue tube, pervs), getting severely dissed by his TV, and beefing it good and proper in the third instalment.



*What happens next is not tasteful*

It's highly insubstantial stuff, but it only costs £1.50 and the author positively promises an assortment of MED tunes, sound samples, Amos programs and graphics files with every order – but can we forgive his dedicating the entire disk to "all the guys of Megadeth"? The jury is out...

If it's finely detailed but unconvincingly animated superheros you're after (see, I knew...) then Spiderman *(Virus Free PD, 3050)* could be what you're looking for.

Although this animation is not particularly life-like (can Spiderman ever be life-like?), the graphics certainly bear an uncanny resemblance to the aforementioned superhero.

It's got quite a neat system self-destruct sequence at the end, and a well-chosen set of colours which reflect the urban feel of Spiderman's patch pretty successfully. But it's a bit long-winded, and is likely to appeal only to fans.

From spiders to frogs, butterflies and killer cars! The irreverantly titled Savings Certificate Animation *(17 Bit, 2372)* follows in the footsteps of other Bad Taste-style animations such as the quite wonderful Hedgehog cartoon from a couple of months ago.

This time we're treated to a complete rip-take of a certain insurance company's advert on TV. It starts



*More urban chaos... it's a job for Spiderman!*

with a tastefully-drawn cocoon developing into a caterpillar, growing wings and flitting away as an adult butterfly – only to be harpooned by a predatory frog and his unfeasibly large tongue.

I suppose there's some kind of perverse natural justice going on there, but you can forget the "natural" and the "justice" bits if attempting to explain why a car drives in, filling the whole screen and squashing the frog instantly.

Doncha love animations? Saving the best till last, the Spaceballs Demo *(17 Bit, 2371)* is a slab of pure class. To an inoffensive (which is certainly not to say bland) left-field dance track, this animation shows various people in silhouette, outline or just plain weird effects, dancing themselves to oblivion against increasingly weird backdrops. They "morph" into shapes and colours, and the range of effects and techniques used in programming Spaceballs are as impressive as they are large.



*Gasp in awe at the power!*

This demo would go down a treat at late night parties with the lights and volume turned down, and your own chosen music turned up!

the largest sprite I've seen in a game for a long time.

The basic aim is to wander around the world collecting letters which make up a word. The word is given before you start a round, and the letters can be scattered anywhere in the jungle.

Of course it's not that simple – there are certain other animals, such as bats in sunglasses and killer birds – who are hell-bent on stopping you, and sap your energy should you come into contact with them.

It's the nice touches which really make this program stand out. The capital letters are all hidden in a large cave, which is where you'll encounter the aforementioned cool-dude bats.

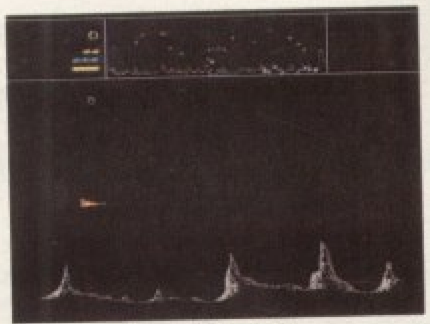
The sound effects are truly wonderful, with a triumphant "Yippee!" (hence the game's title) when you complete a word, and a disappointed (rather than terror-stricken) "Oh!" when you lose some energy. It is a little bit slow, but then it is an Amos game, and to be honest this is probably not a hindrance for young children, who might struggle faced with a sprite who shifts around at Sonic the Hedgehog speed.

I can't praise this program enough. If you want a cheap, worthwhile and fun time-filler for your youngster(s), you'd be mad to spend money on a full-priced package if you hadn't already ordered a copy of Yippee.

## Oblivion

### 17 Bit, 2364

It's defender! The hardy arcade classic gets re-born for about the three-hundredth time on the Amiga. However, this is a rather sparkling and special version,



*Oblivion: a great rendition of the classic arcade game Defender*

due to a rather stricter adherence to the look, sound and feel of the original than most of its predecessors.

Indeed, the authenticity stretches from (as far as my experience-battered memory serves me) all the right alien ships to the correct sequence of dots turning into your ship at the start of every life, to the wonderful (at the time) sound effects when you hit things and get hit.

There's the map showing you what's going on off your immediate bit of the playing area, the mountains you can fly through – and the gameplay is up to scratch. Taking advantage of the fact that this version runs on a home computer and not an ultra-basic arcade machine, there are plenty of options you can select before playing, too. You can choose whether to use keyboard or joystick, select one or two player games, and exit.

Fast, loud, devilishly addictive – yup, you might have guessed that I quite liked this interpretation. If you're after a version, get this one.



## Contacts

Cacophony PD – 49 Perrott Close, North Leigh, Witney OX8 6RU

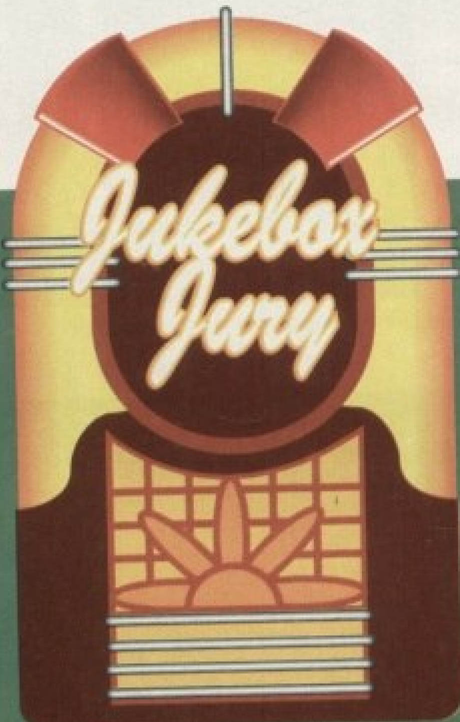
Déjà Vu - 7 Hollinbrook, Beech Hill, Wigan WN6 7SG

Lunchtime (Amiga) – 203 London Road, Chesterton, Newcastle ST5 7HT

Mike Hillerby – 23 Oakfield, Newton Aycliffe, Co Durham DL5 7AS

17 Bit – 1st Floor Offices, 2/8 Market Street, Wakefield WF1 1DH

Virus Free PD – 31 Faringdon Road, Swindon SN1 5AR




Two quite different music disks are before the jury this month. First out of the bag is Skyboard Music 1 (*17 Bit, 2352*). Written by Ice Cube (one would guess that it isn't the Ice Cube!) this demo has thrown its card right down on the table by the time you've reach the menu screen.

With titles like Acid Snap, Rave Mix 2, Crave-4-Rave and Total Raveness, we can safely conclude that it's analogue synth samples and chopped up kiddies' TV programs aplenty. No, we're not talking Barbara Streisand.

What we are talking is some pretty interesting, if ultimately a little bland, reworkings of some famous stuff. Best of the bunch is Acid Snap, which is a stripped-to-the-bone acid house remake of Snap's radio-friendly rave hit Rhythm is a Dancer.

Crave-4-Rave, with its terminally uncool moniker and age-old samples, does actually attempt to do something at least not copied with them, and the other tracks all contain at least one sequence or sample which pricks up your ears.

So – the jury have weighed up the highly unoriginal concept and the old samples against the obvious spattering of good ideas which run through this demo like words through a stick of rock and decided – yes! It's a hit! Yippee!

Ahem. And so to the second disk, Anarchy Legalise It 2 (*17 Bit, 2380A/B - two disks*). It might sound undergroundy and ravey, but maybe the title is misleading.

I remember the last Anarchy collection – it was all slick presentation, friendly user interfaces and nice if simple graphics, but musically? Naah, it was wishy-washy nonsense.

This, though, is a lot better. All eight tunes display a definite leaning towards jazz, a musical form which by its free-form nature must be rather hard to reproduce on computers.

However, with the help of their influences – the James Taylor Quartet and Brand New Heavies among others – Anarchy have put together a very pleasing disk indeed.

You are struck first by the sheer quality of the samples. They go to show just what 8-bit is capable of if handled correctly. The reverb on the snare drum has to be heard to be believed, and the guitars – those most devilish things to sample – are absolutely spot-on.

However, the music nods towards the high-tech medium across which it is being played by displaying a harder, technology-riddled side, full of digital sound effects and unnatural weirdness.

The result? A hybrid of jazz and electronic music, well presented and sounding like sweet harmony from beginning to end. The jury say... a great big improvised "hit!"

If it's 3.5in across, floppy, and plays music when you click on the right icon, I want to see it for consideration for this column, so keep those music disks coming in.




*Check those titles out! Subtle or what?*

## Got any good PD?

**If you're a library, a programmer, a dosser – I care not, for I judge people purely by the quality of the PD they send me. So why not get those Jiffy bags out, get those drives a-copying and lob the lot in the post to me, Phil Morse, at:**

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**Europa House**
**Adlington Park**
**Macclesfield**
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**Particularly in demand at the moment (and so more likely to be reviewed) are music demos, good games and original applications, so if you've any of these you wish to publicise, you know where to send 'em. Remember, the world is listening...**

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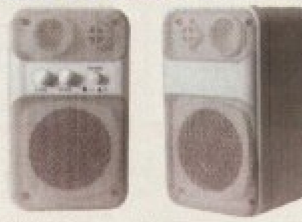
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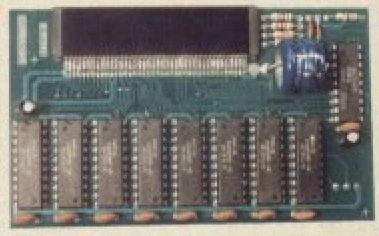
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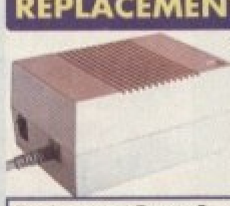
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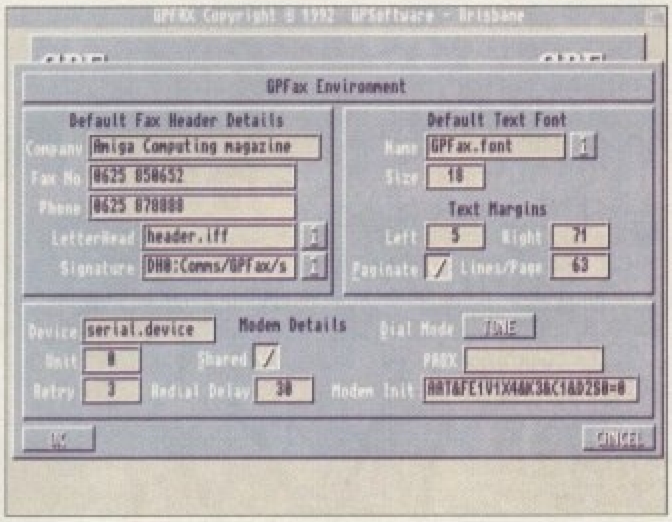
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# The plain fax

**Stevie Kennedy finds that the Supra FAXModem does it on paper**




*Complete control is available over everything from fonts used...*




*...to auto-answer and report logging*

It might surprise some people to find that the common or garden fax machine is little more than a modem attached to a printer and a scanner, which converts a scanned image of a page into binary form and squirts it down the phone line. Furthermore, exactly the same results can be emulated using a hand scanner and a modem.

Ah, but there's the rub – fax machines don't talk to ordinary modems, so although modem-owning friends might be able to exchange Email and data files, they can't communicate with the millions of fax machines sitting in offices the world over. Enter stage left, on white horse and clad in shining armour, the Supra FAXModem.

Running at 14,400 baud for fax transmissions and 9,600 (V32 bis) for normal modem operations, the diminutive Supra unit is externally identical to all other modems. However, lurking beneath its brushed aluminium casing is a powerful modem and a fully functioning fax machine which can link the Amiga's keyboard directly to almost any business address in the world.

## Clever

What sets it apart is the GPFax software with which the user can carry out more or less any job possible with a normal fax machine and a few which aren't.

Designed to multitask with Workbench and run the FAXModem in the background, GPFax is a management and control program, and so it doesn't actually create a fax from start. Instead, through several rather clever software tricks, GPFax conspires to make using the FAXModem and transmitting virtually anything very easy indeed.

Faxes can be produced either by creating text and/or graphics in another package, saving them out, then converting them to fax format using GPFax, or a complete message can be drafted in another package.

When GPFax's printer driver option is used, any output sent to the PRT: device while GPFax is running is automatically intercepted, converted to fax format, then stored in the fax out drawer ready to be dispatched.

The resulting fax is a clean and accurate copy of the original, much more so than when an ordinary fax machine is used to transmit it, because it is an exact digital copy of the user's message rather than a scanned image. In addition, the usual paper jamming and the sort of garbled messages caused by misaligned paper at the transmitting end are no longer a problem. Receiving a fax is also simple, and can be either automatic or manual. For automatic fax reception, the auto-answer option must be selected from the GPFax options screen and the modem itself must ideally have a phone line of its own.

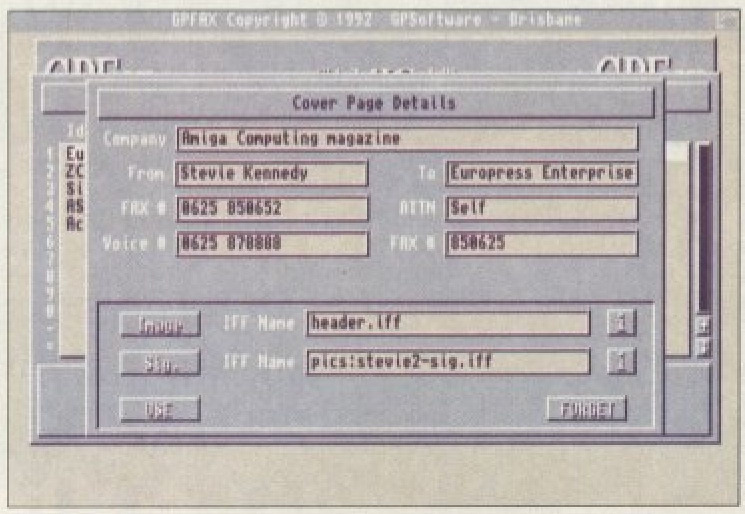
Auto-answer works on a shared voice/fax line, but the prospect of picking up the telephone and hearing the screech of a fax machine several times a day is enough to prompt most business users to dedicate a line to the fax. Manual reception of faxes is accomplished by clicking on the receive fax button on GPFax's main screen, so there are no problems if a shared phone line is used. GPFax will stay in receive mode until it hears another fax machine's ID signal or until the user aborts.

Once a fax has been received it can, of course, be printed or can be viewed from within GPFax if the user hasn't a printer or the time to commit the fax to hard copy.

Utilising the scheduler option, the GPFax user can take advantage of an advanced feature whereby any number of faxes can be created and given their own transmission time. The scheduled faxes will sit quietly in the out basket until the Amiga's clock tells them it's time to go, at which juncture they automatically send themselves to their predetermined destinations.

As GPFax's environment requester enables the user to decide how many retries will be made if a line is busy and how long a delay will be left between each retry, it is possible to ensure that no fax will ever back up into another's time slot. Even in this unlikely event, however, the second fax will wait until the first has finished before it toddles off on its own electronic voyage.

Supra's FAXModem is neat, compact, eminently usable, and for the price is superb value for money. With a minimum of set-up hassle it works cleanly and smoothly and offers the Amiga user a cost effective solution for both Email and fax.




*Individual cover pages can be created for each phone book entry*

## Colour free zone

Problems can occur with some packages when creating faxes if the printed page is generated with anything other than a transparent background colour, which usually happens when the package's default colour scheme has been changed.

In such cases the fax will have a solid light grey dithered pattern as its base colour, thus taking an age to transmit, but care with the colour palette can avert this danger.

DTP packages such as PageSetter or PageStream are best suited to fax generation as the printed page will have zero background colour and can use jaggie-free Agfa fonts in combination with graphics, but wordprocessors should be perfectly acceptable.

DPaint and other art packages with a print option will also be intercepted if they print, making the transmission of maps, charts, and other graphics much quicker.

The advantage of typing a fax, "printing" it, then sending it without leaving the keyboard lends a whole new aspect to electronic business communications.

### SYSTEM ESSENTIALS

RED = Essential YELLOW = Recommend

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### The bottom line

Ease-of-use = 9
Implementation = 9
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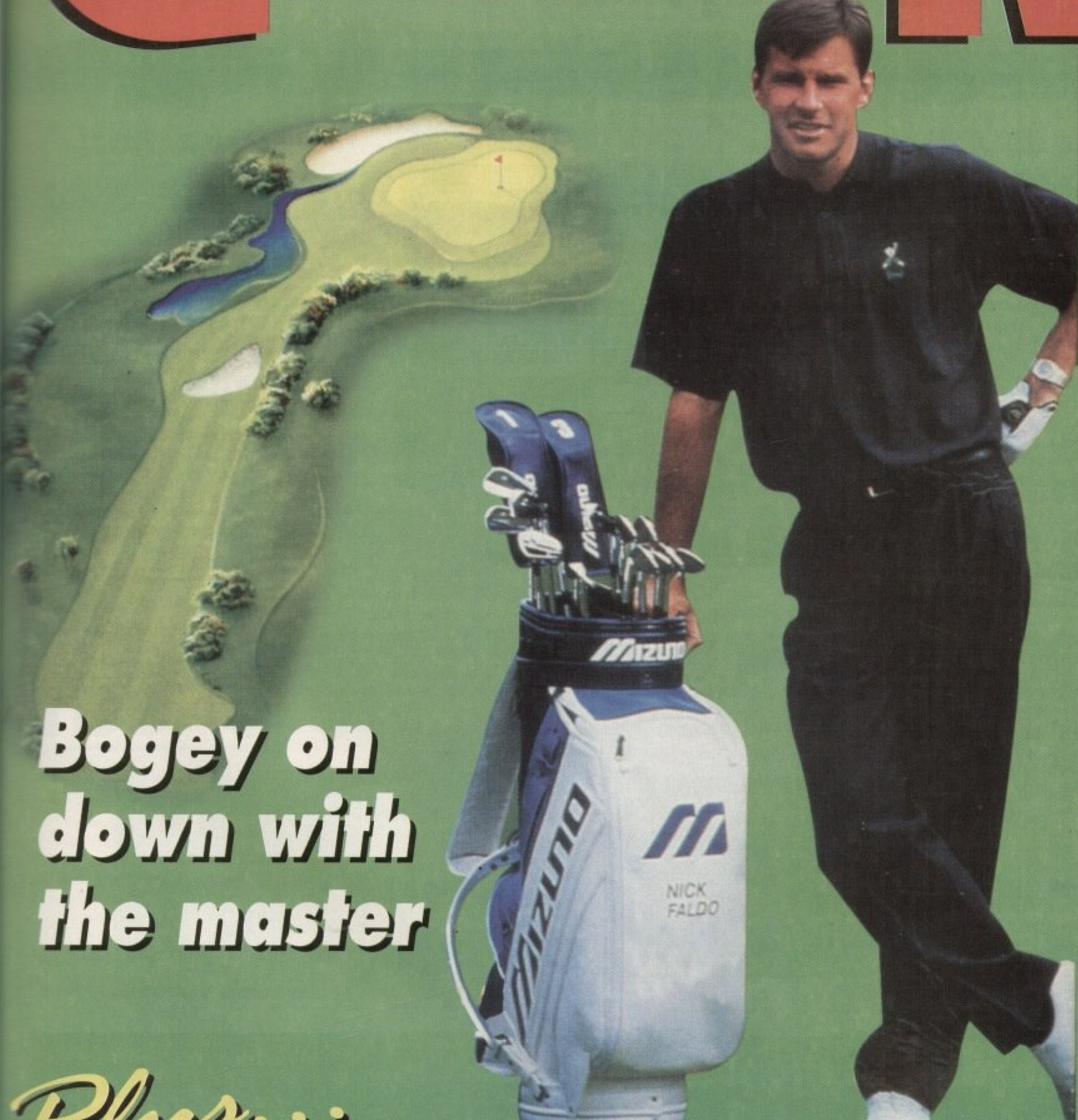
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**WATCH THE BIRDIE!**

ISSUE NINETEEN • APRIL 1993

# GAMER

..THE UNSTOPPABLE GAMES MACHINE..




## Bogey on down with the master

*Plus...*

**REVIEWS...** NICK FALDO'S CHAMPIONSHIP GOLF • WING COMMANDER • WALKER
KRUSTY'S FUN HOUSE • CHAOS ENGINE • LEMMINGS 2 and more besides!

**ALSO...** SOCCER KID, CHEAPOS, BLAST FROM THE PAST AND "NOT KICK OFF 3",
THE FINAL PART IN OUR CURSE OF ENCHANTIA SOLUTION PLUS all the latest Amiga gaming news

# ONword

Remember don't phone, it's just for fun...

## Captivating stuff?

Captive was voted game of the year in 1990 and is still remembered today as one of the best role-playing games ever. Tony Crowther, the game's creator, has been hard at work developing new technology to allow him to create a sequel.

Imaginatively titled Captive 2, it is based in the 29th century and is described as Cyberpunk role-playing.

Apparently the graphics and gameplay have been improved ten times over, plus it'll all be in 64 colours. That's almost twice as many as a normal Amiga game! Cor!

The world is now under the control of huge state corporations which have been abusing its resources and grinding it into a state of decay. Hey, that sounds more like modern day, never mind the 29th century.

Anyway, one of these corporations is called BioCorp. BioCorp has a number of droids which have become unreliable. It was just simple things like going out and killing innocent civilians instead of computing data.

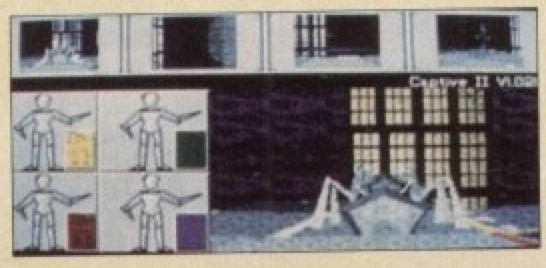
BioCorp decided that this would be bad publicity and could damage the business, so they have falsely accused and imprisoned innocent people for the murders that have taken place.

You play the role of Trill from Captive 1. You are once again in control of four droids, but this time you use them to rescue the people who have been imprisoned.

The game is based around huge futuristic cities with interlinking road systems. It's like Blade Runner, but in an RPG stylee. There are 4,096 randomly generated cities to tackle, so it should keep you at your computer until you're old and grey.

Mindscape say that it's scheduled for release in March 1993 and will probably cost you around £30. There could also be a A1200 specific version, but then again...





## EA and Ocean in tie-in shocker!

**Electronic Arts have just announced a tie-in with Ocean. The Manchester-based software house are now allowed to re-publish a number of Electronic Arts titles on their Hit Squad label. The titles involved will be repacked by Ocean and sold at between £7.99 and £14.99.**

**Mark Lewis, President of Electronic Arts Europe, commented: "Ocean's expertise in the area of re-release publishing is unrivalled in this industry.**

**"This is a significant move for Electronic Arts that acknowledges that budget publishing is becoming more specialised."**

**Expect to see such hit titles as Populous, Budokan and The Immortal on the shelves very soon.**

ELECTRONIC ARTS

ocean

## Better the Divil you know

Gremlin are in the works again, this ti with a fiendish game called Litil Divil. Three years in development, Litil Divil promises to be one of the most innovative and challenging interactive game quests ever devised.

The game's star is known as Morris or Mad Mo to his friends. By chance, Morris finds out that the Lost City of the Underworld is in his cellar.

Mo, being quite inquisitive, decides to check it out, but is stopped when he comes across a granite door which is covered in hieroglyphics. The door won't open until he decodes it. As he settles down to translate it, he notices a pool of water and decides to take a quick drink...

Whoops, probably the worst drink in the world. Morris begins to change into a mythical Divil. As the Divil, Morris can read the words "Those drinking from the pool will be doomed to roam the Lost City of the Underworld" on the door. Morris has to enter the city and find the Fountain of Normality to change himself back. Hey, sounds like a good idea for a game.

To achieve your goal you have to negotiate dark tunnels and solve fiendish puzzles. The game is split into five distinctive levels each containing ten puzzle rooms. If Litil Divil takes too long in solving puzzles, he will be pursued by a creature known as the Entity and then tortured to death. Gulp!

Graphically Litil Divil looks very much in the style of Heimdall, but will probably be tons better. To be honest it could well be one of the hits of 93. Gremlin plan to release the game in April and the price is still to be announced, but hey, I bet it's £25.99. Go be a devil.





## Toadly Excellent

**As well as releasing Captive 2, Mindscape are just about to release Battletoads – the game they promised us way back in September 1992.**

**The screenshots you see here are the newest yet and it looks as though it'll be worth the wait. Battletoads, a firm favourite with Nintendo fans, features, err, battling toads and hot platform and shoot-'em-up action.**

**If it's half as good as the Nintendo version,it'll be in contention for the coveted Gamer Gold award.**





## Coming soon

Team 17 are beavering away on the sequel to Project X. Provisionally titled X2,it is initially to be written for the A1200 with cut-down versions for the 500/600 arriving later. It will be simply unbelievable say Team 17. Hmm, we shall see.

Gremlin have also announced plans to release a sequel to their number one hit smash Zool - Ninja of the Nth Dimension. Expect it in the latter half of the year and probably humorously named Zool 2.

More elasticated fun is on the way thanks to the boys and girls at System 3 because Putty 2 is on the horizon. It seems that sequel madness has gripped the whole computer industry.

Probably the biggest sequel this year is coming at Christmas! Sensible Soccer 2 is going to render all other soccer games null and void, or so Sensible Software supremo Chris Yates says. Apparently the new game is going to have a player/manager angle and will have a more global feel to it. I can't wait.

Rumours are flying around that the forthcoming Uridium 2 which is due for a release in the next few months will feature music by top ambient dance band The Orb.

But The Orb are not the only stars to have their music featured in a game. It's also rumoured that those cheeky jesters Altern8 are to appear in a computer game. But do we believe them?

Probably the most outrageous rumour is that Stourbridge sensations Pop Will Eat Itself will feature in a computer game entirely based on their top ten hit smash single Get The Girl, Kill The Baddies. I'll believe it when I see it. Grr.

One of the most eagerly awaited games ever must be Apocalypse. The helicopter shoot-'em-up was sent down the tubes when Mr Maxwell took the big dive into the sky, thus sending Mirrorsoft down with him.

A clever person at Virgin saw it and promptly snapped it up. It's been on the go for two years now is expected in late February/early March. This could well be Virgin's best game yet.

Not content with the charidee fund-raising Sleepwalker, Ocean are on the warpath with will be the two of years biggest games. The first, Jurassic Park, is based on the film of the same name.

The film which is currently being directed by Steven Spielberg is believed to be the most expensive ever made, and is all about a safari park on a tropical island where the animals are not pot-bellied pigs and parrots, but genetically-engineered dinosaurs.

Details are very scarce, but ocean say that it's not going to be just another platform game.

The second game is called Lobo. Any decent comic fan will know who he is. Lobo is a superhero who for a certain price will bump off anything anywhere including other superheroes.

For instance, he once took a disliking to Superman and almost killed him. Lobo is incredibly violent, and Ocean assure the world that the violence will not be toned down. Great stuff.

**Can this be true – a Zool coin-op? It certainly is – it's on the streets in the summer. More info next month...**



# GAMER INNER VISION

***Meatier than a tin of Spam on steroids***

## REGULARS-REGULARS-REGULARS



## REVIEWS-REVIEWS-REVIEWS

High altitude action in an...

# NICK FALDO'S CHAMPIONSHIP GOLF

GRANDSLAM ▪ £25.99 ▪ 1 meg ▪ Mouse ▪ Out now

I've always fancied golf. Not literally – not to the point where I'd approach it in a nightclub dressed in me best gear and enquire as to the chances of a slow dance in a dark corner – but I fancy it, all the same.

It's the sheer lackadaisicality of it all that appeals to me – wandering around a few fields on a nice sunny day with a little trolley in tow, periodically delivering a hefty tubbing to a small defenceless object before moving on to the club house and discussing the price of leaded windows for conservatories over a few dry Martinis.

But other times golf scares me. Drive past a golf course on any given day in winter and you'll understand why. The wind sounds like a tea kettle and the trees are bent over almost double.

The rain – horizontal – lashes with such force that old ladies are separated from their teeth, and church spires are split in two by forked lightning.

Look at the course though, and what do you see? Puddles? Certainly – lakes even. Broken flagpoles? Yes... flying around everywhere. Desolation? No! No! The place is absolutely bloody packed!

Men, women, children! All dressed in waterproofs! All dragging their clubs! Through puddles. Over fallen trees. Each one determined to complete a round of golf regardless of the possible cost to personal health or safety. So addicted are they to their sport that nothing else matters as they chase that elusive handicap lowering score.

It is sad sights such as these which convince me that golf is a game played by obsessive maniacs, and my own prowess on the course would be best restricted to clicking a few buttons in the comfort of my own home – a view shared by many it would seem, as the popularity of the many golf sims over the last couple of years has proven.

In fact, with two truly excellent golfers in the shape of Microprose Golf and PGA Tour already firm armchair favourites, it seemed a strange decision by Grandslam – not, in all fairness, noted for their big name titles – to launch an attack down the back nine (that's golfing jargon, that is).

But launch one they did, and with a name the size of Nick Faldo backing them up, there's no doubting the seriousness of their challenge.

Let's stop and chat about the graphics for a while. They're smart. Not much of a chat that, was it? I'll elaborate then. For the first time on a non-PC golfing sim what we have is actually a very reasonable facsimile of a course, complete with blades of grass, beautifully detailed trees, sandy bunkers, a clubhouse that looks like a clubhouse – the lot.

In short, more – far, far more – than the usual "different shades of green and brown" approach adopted previously. But where Nick Faldo's Championship Golf really scores maximum points for presentation is in the sprite.

Yes, the sprite – old Nick himself, sporting an impressive array of tank tops, and basking in all his digitised glory. Such is the smoothness and realism, that when a shot is taken it's as though you are watching a piece of video footage. Very impressive indeed, and on seeing this shortly after booting up I really began to look forward to playing what seemed like a real contender for top spot on the Fairway Hit Parade.

Gameplay is where it's at though – never more important than in an affair such as this – so does NFCG hit a straight drive, or is it a bag of balls?

Nobody's perfect, not even the master himself, so the best thing to do straight from the off is to have a bit of a practice. The coaching section is very comprehensive indeed. It needs to be – after all, you're posing as Nick Faldo, and it just wouldn't do to go flubbing and whiffing your way around the course would it? Not good for the image, you see.

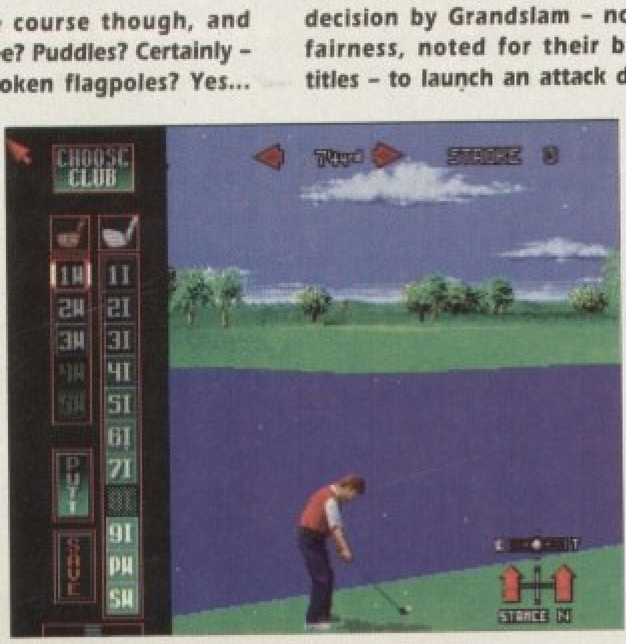
In a practice session you have the option of tuning up your putting, bunker play, and several other potentially problematic areas. As with the other sections, each situation is presented by Nick, and additional information and advice can be gained at the click of a button.

When you're happy with your prowess it's time to shoot a round for real. Up to four players can take part in either stroke play (the person with the lowest overall score after one full round is the winner) or match play (competing hole by hole).

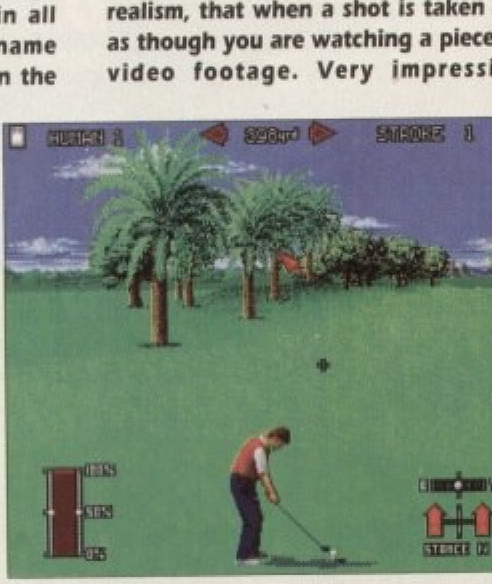
If you have a bad case of BO and are consequently friendless, don't slit your wrists just yet, because there is the choice of competing against computer opponents, or indeed playing on your own.

The eight compo opponents range from the dodgy Davey Divot to Nick Faldo – not a bad guy to have on your side in the matchplay mode!

One disappointment is that there's only a choice of two courses, as opposed to the four and six in PGA and Microprose respectively. We are



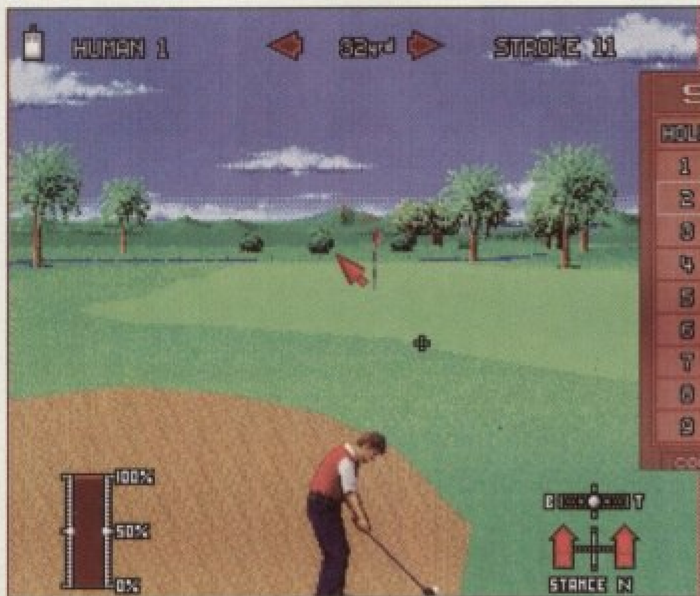

Coaching mode – it's not easy either – bring your trunks




Fear not fashion fans – Nick comes with a comprehensive set of chunky knit tank tops




Nice tree eh? You might not think so when you have to climb it




All seems well – until we glance at the stroke indicator!




Well, it's not a London bus, is it?

give a choice of three seasons in which to play, though – summer, spring and winter – which with their varying wind and ground conditions, compensate somewhat. OK then, I can see you're impatient – let's have a round.

Presentation during a round is, again, spot on. Two "pop-up" type menus appear from either side, showing everything from the course map and wind conditions to the lie of your ball and club selection. These are something of an innovation – far more effective than previous methods.

One thing I haven't mentioned yet – and it is quite a drawback – is the control method of the swingometer-thing. For some bizarre reason the programmers have implemented a "double-click" power bar, and by the left, it's a bugger to get to grips with!

Once you've selected your club and aimed (perspective can be changed by clicking left or right on the relevant arrows – another innovation), the power bar appears, sporting two shaded sections.

The first – tiny – section is for wrist snap, adding a few extra yards to a successful shot, and is advisable for experienced players only.

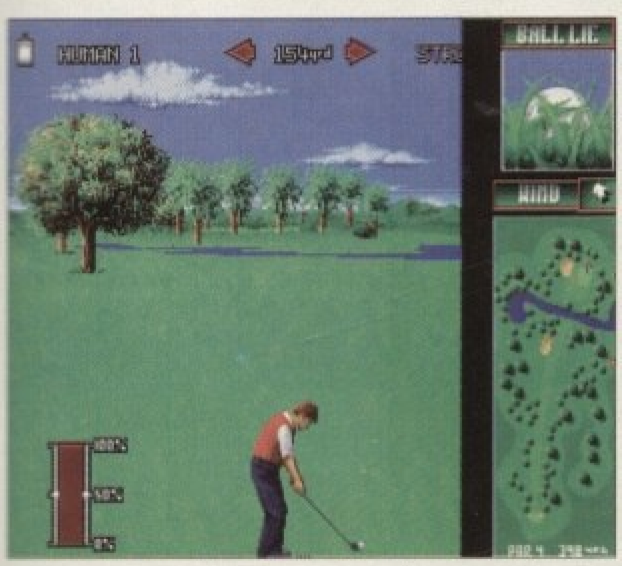
The second, all-important shaded bit is the accuracy point, and in order to carry out a true shot, the erstwhile golfer needs to click twice within the confines of this miniscule portion. An error to either side results in excess hook or fade, and a near certain trek into the rough.

Sizes of his accuracy point vary, dependant upon club chosen, percentage power, and whether or not the player is in professional or amateur mode.

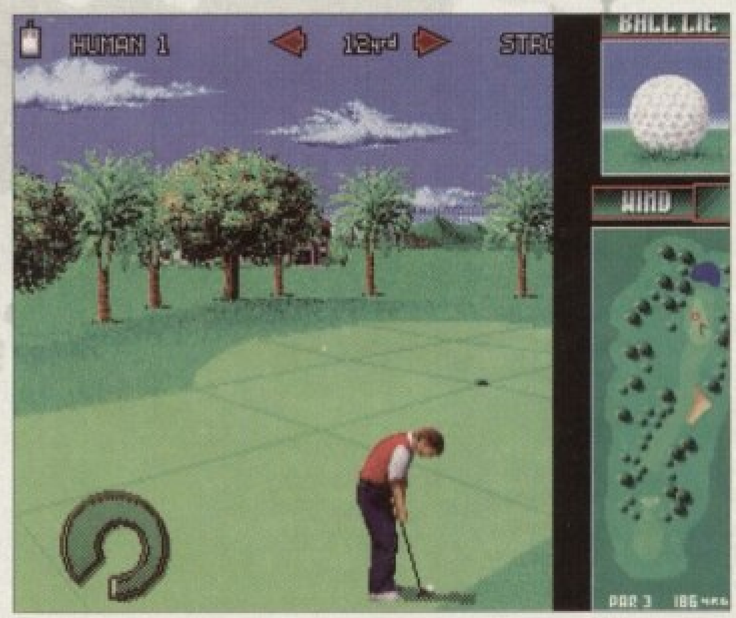
This method was apparently decided upon to add realism, and I guess it succeeds, since anyone who's tried first time to drive straight down the fairway will know it isn't very likely. The realism factor is carried throughout the game; for instance, when in heavy rough, nothing but a very low iron or pitching wedge will see the ball safely back onto the fairway – unlike in other games perhaps, where a 100-yarder could be achieved even from the sand.

Also, the more success you enjoy with a particular club, the longer the accuracy point gets, allowing you to "improve" as you would with practice in the real thing.

Putting is easier to come to terms with – simplistic green contours appear when aiming for the hole, and a much simpler power bar comes into operation.




Send your witty captions to Gamer, Europa House...




Putting could be better, but the pop-out menus are top

Nick Faldo's Championship Golf was always going to have to do a hell of a lot to become the best in its genre. It nearly does enough. The graphics are amazing, and new features as mentioned (plus the option to choose your own caddy, and drop him/her at will) make for a very enjoyable experience indeed.

The realism is undisputed – as a realistic golfing experience it can't be bettered – but there are a couple of quirks. Although the accuracy point does grow with success, it actually diminishes with the reverse, resulting in early frustrations.

When these are overcome, you'll be delighted, but the fact that they are there at all means that in my opinion it's a sudden death play-off for joint second place between NFCG and PGA Tour. Microprose is still tops – just – but check this out anyway, it's more than worth the money.

**Paul**

**VISION**

Best graphics you're likely to see in a sports sim.

**AUDIO**

Club swishing and dicky birds chirping – it's all very serene.

**PLAYABILITY**

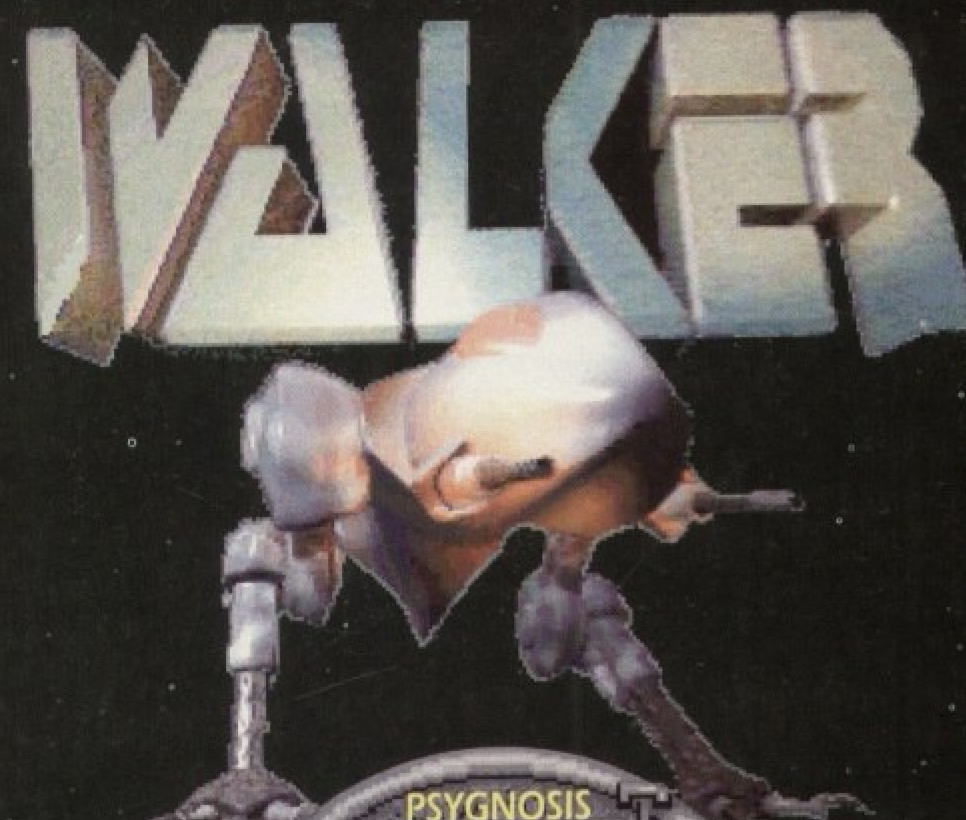
Nice innovative touches throughout, but it's tough.

**ADDICTION**

Master the difficulty and you won't be disappointed.

**87%**

Back to front action all the way!



Computer games are loved for many reasons, but the overriding attraction is that while engaged, the player is transported to a place in his or her mind where just about anything is possible.

Wartime Germany or modern day middle east can be bombard utilizing period technology to the full, new worlds can be explored in the Space Shuttle, mythical lands exorcised of demons at the wave of a hand and the cast of a spell, and motor racing circuits can be created and raced around at break-neck speeds.

Shuttle, Wing Commander, Legend of Kyrandia, Project X – the names are all strongly suggestive of action, intrigue and adventure, which is precisely what we gamers crave. Call a game Puddle or Cheese Plant and it just doesn't conjure up the same image. Similarly, if it's a crazed and frantic contest that you're after, then an affair called Walker isn't necessarily going initiate an adrenalin flood, because lets face it – unless you own a pair of stout shoes and a durable nylon rucksack, walking simply isn't very interesting.

Names can be deceptive though – I remember shortly after beginning high school, I picked a fight with a lad called Hillary; he gave me the drubbing of my life and taught me a valuable lesson in presumptuousness. By the same token, far from being a dull and boring one-leg-in-front-of-the-other-'em-up, Walker is in fact a shoot-'em-up, and a bit of a stonker at that.

Sometime in the near future, law and order throughout the world have broken down. Due to rapid technological advances, enemies are able not only to destroy each other with what have become coventional weaponry, but can eliminate entire forces by travelling backwards and forwards through time in massive time travelling weapons – a la Back To The Future – and destroying their ancestors, thus ensuring their foes were never born. By Jove!




The flagship of this curious clock-defying army is the AG-9 Walker, a ten metre-tall heavy duty tank on legs that – if tanks broke sweat, which they obviously don't, but if they did – could anihilate a city without spilling a single salty bead.

You take charge of the Walker as it stalks through four different points in time, seemingly forgetting its mission and destroying every single thing that moves. The enemies vary according to the point in time in which you currently stand (or walk – guffaw!): Lancaster Bombers and Army trucks lead the bombardment in the World War One stage; space-age vehicles take over the mantle on the Future level, and a whole array of semi-modern pieces of kit comprise the middle two levels – the Urban and Industrial time points.

Having mentioned it earlier on, you may now be wondering quite how a shoot-'em-up featuring a "tank on legs" could work. Very simply, is the answer. Unusually, the screen scrolls from right to left, and the Walker is controlled by a combination of the mouse and keyboard. The cursor keys (or certain letter keys) are used to move big W backwards and forwards, while the mouse comes into play to manipulate the weapons.

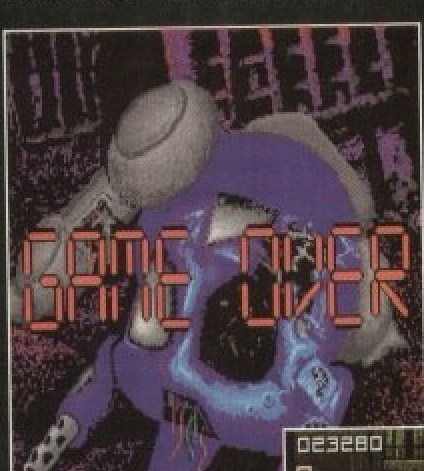
The Walker itself is a pleasure to watch. A massive 81 frames of animation ensure that every move it makes is impressively smooth as it stomps its way to destruction. Enemy characters are contrasting – most (with the notable exception of the level guardians) are quite small and plain in colour – but the animation, both of these and of the atmospheric backgrounds, are such that the two styles complement each other well.

The backdrops also change in accordance to the time frame, and the number and speed of the enemies ensure that boredom will be a long time in setting in. What helps Walker really stand out from the crowd though, is the sound. Seldom are you likely to hear more realistic or fearsome in game samples as these, and the pumping intro tune (seven minutes long!) does an excellent job of creating an atmosphere conducive to killing.

When we previewed Walker a couple of months ago, it was thought that there would be the option to actually control the machine from inside the cockpit. There isn't, and having seen the game it becomes obvious that an attempt at implementing this would spoil the game.

Developers DMA have managed to combine the best elements of several games in coming up with Walker – a tough, fun, addictive and original shoot-'em-up that oozes quality and spews out action like there's no tomorrow. Power-ups would have been nice, and a pause option wouldn't have gone amiss, but this is a great release from Psygnosis – a real tension reliever.

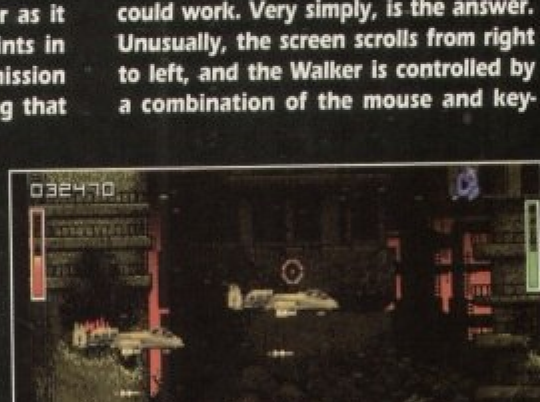
Paul




Of course, I could've finished it easily – but this is such a nice picture, I thougt, well...




The brave Walker takes cover.




Come out, come out, wherever you are...

VISION

Superb sprite and atmospheric settings.

AUDIO

Brilliant intro tune and superb FX make for a lot of fun.

PLAYABILITY

Surprisingly easy to comes to terms with.

ADDICTION

Excellent fun for the psychologically balanced.

87%

It's a lot less bovver with a hover

# AV-8B HARRIER ASSAULT

**DOMARK ▪ £34.99 ▪ 1 meg**
**Mouse/joystick/keyboard ▪ Out now**

**VISION**
Very nice indeed, but it is incredibly slow on the 500.

**AUDIO**
Not much going on here apart from the engine noise.

**PLAYABILITY**
Once you get the hang of flying the plane, it's good fun.

**ADDICTION**
For die-hard flight sim addicts only.

**65%**

This year looks as if it's going to be a good one for all you flight sim fans out there. But it's about time we had something a bit different instead of just changing the plane you fly. Oh look! Domark have obliged with the release of Harrier Assault.

Not your average easy-to-fly planes, these Harrier things – it's like trying the balance yourself on top of two very big fans, only harder. But more of that later. I'd better tell you why you're to fly this overgrown extractor fan.

Take most flight games and you'll find that the only job you have to do is complete pre-set missions while flying a high powered jet, but it's different in Harrier Assault. Here the concept is extended because you get to play two roles.

The first role is as Commander of the Rapid Deployment Force (RDF) in which you run the campaign of Operation Ocean Saber. Operation Ocean Saber is a UN–authorised invasion of East Timor in Southeast Asia.

In the job you are tasked with landing US Marines in hostile terrain and making strategic and tactical decisions for the force as a whole.

The second role is as a squadron pilot, in which you fly the AV–8B Harrier jump jet (surprise surprise) from the flight deck of the USS Tarawa and take it into combat against the armed forces of Indonesia, the nation which has seized East Timor.

As you can see, it's just slightly different from other flight sims, but hey if you're a traditionalist you can simply fly the Harrier and let the computer make those all-important tactical and strategic decisions for you.

As mentioned above, the game is set in and around East Timor in Southeast Asia and I can't ever remember a flight sim set in that country, so you can't fault Domark for not being different from the rest.

As far back as I can remember I actually think this is the first proper flight sim featuring the Harrier Jump Jet. I think most software companies tended to ignore it, maybe because it is very hard to, err, simulate. But why is it so hard to simulate? I hear you all cry. Well, it's because the Harrier is a VTOL fighter aircraft. As you probably already know, VTOL stands for Vertical Take Off and Landing and it means that the jet can take off and land, err vertically. Hey, you learn something old from people who shouldn't witter on so much every day.

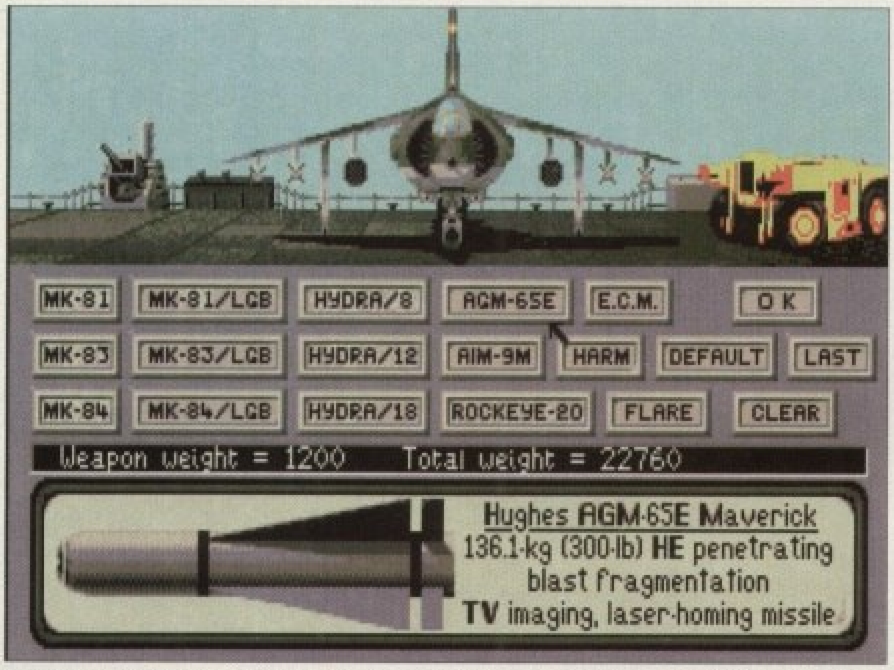
The AV–8B Harrier is not the sort of plane you want to meet on a dark night. It can be tooled up to the teeth with five types of ordnance ranging from guided missiles to your bog standard unguided rockets to high–tech laser–guided bombs, plus it's got a couple of awesome 25mm cannons bolted on the front. We are talking total destruction here, kids.

I'll let you in on a little secret, but only if you don't tell anyone. Most flight sims claim that they are accurate down to the tiniest detail, but they are not that accurate in the control department.

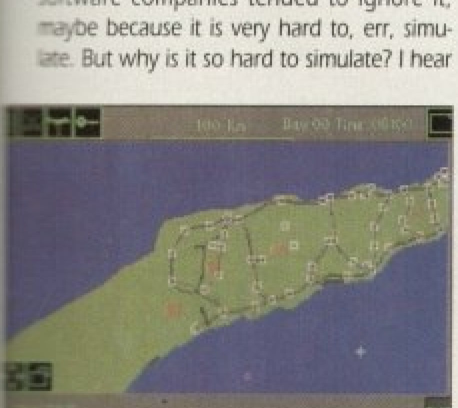
Planes as a general rule are a right pain in the botty to fly – ask anyone who's been on the Krypton Factor. To combat this fact, most programmers make flight that bit easier, but this is not the case with Harrier Assault. The flight model is very realistic indeed so if you want a challenge, you've got one.

Harrier is very good fun once you get into it but I think that it is fair to warn 500 owners that it's deadly slow unless you have an accelerator.

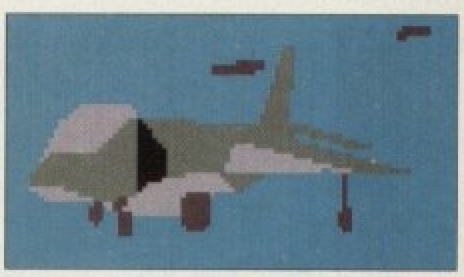
**Ben**




**Err, Maverick missiles...Laser-guided bombs...cuddly toy... Beep Beep Beep. Didn't they do well?**



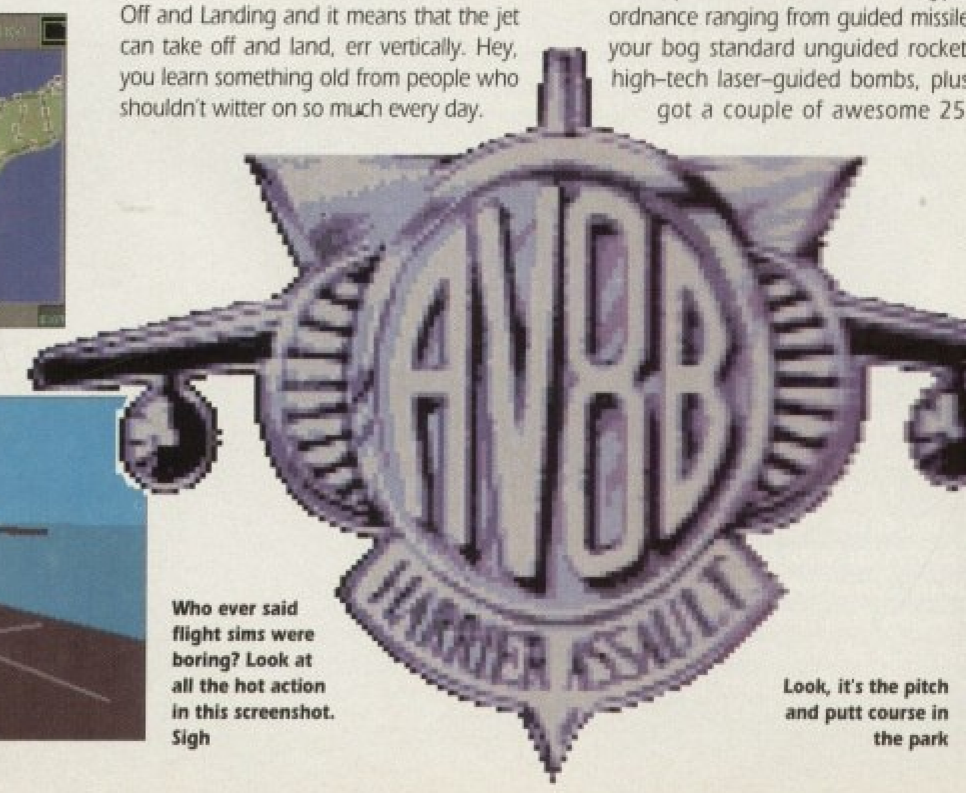
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**This is your captain speaking. Enjoy the flight**



**Who ever said flight sims were boring? Look at all the hot action in this screenshot. Sigh**






**Look, it's the pitch and putt course in the park**



Entropy antics

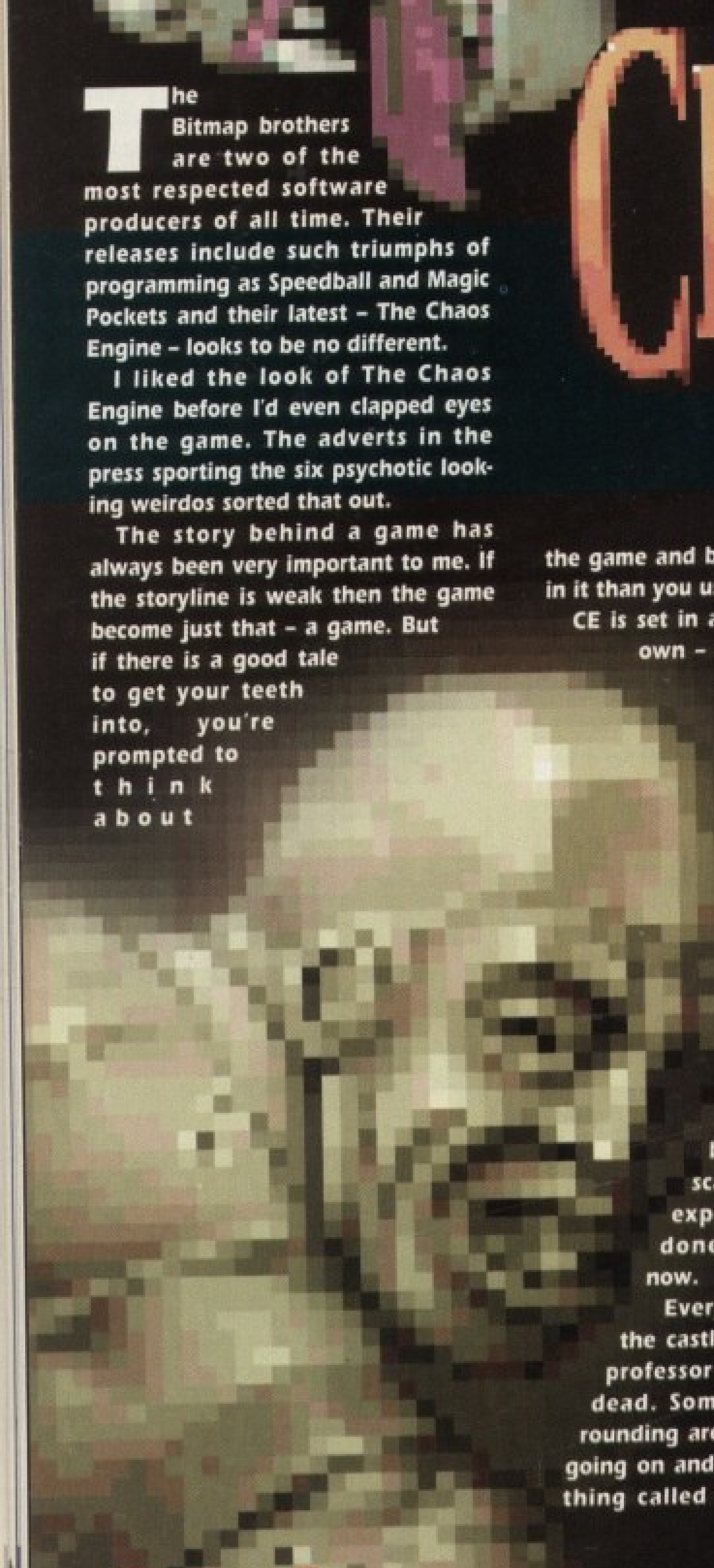
# THE CHAOS ENGINE

RENEGADE • £25.99 • 1 meg • Joystick • Out now

The Bitmap brothers are two of the most respected software producers of all time. Their releases include such triumphs of programming as Speedball and Magic Pockets and their latest – The Chaos Engine – looks to be no different.

I liked the look of The Chaos Engine before I'd even clapped eyes on the game. The adverts in the press sporting the six psychotic looking weirdos sorted that out.

The story behind a game has always been very important to me. If the storyline is weak then the game become just that – a game. But if there is a good tale to get your teeth into, you're prompted to think about the game and become more involved in it than you usually would.



CE is set in a world similar to our own – not exactly free from trouble and strife. In a castle near to a town there lives a mad professor type. As per usual the experiments he is conducting are far from your average medical research.

Even so there is nothing that the locals can do, mainly because they are too scared and none of the experiments have really done any damage until now.

Everything went quiet at the castle for a while and the professor was rumoured to be dead. Some people in the surrounding area did know what was going on and the talk was of something called the Chaos Engine, a weapon of massive proportions.

People in the village started being attacked by horrible mutations and eventually began to realise that it was the Chaos Engine which was warping space and time causing these freaks of nature. The machine, naturally, had to be stopped before it destroyed the world.

The players must battle through the four worlds, each of which contain four levels. To shut down the Chaos Engine you have to choose two reckless psychopaths to go in and kill hundreds of dribbling beasties.

Of course there are loads of people lining up to do this sort of job, but you have a shortlist of six nutters from all walks of life – a preacher, a navvy, a mercenary, a gentleman and a thug. Each characters has different attributes and a special power (this is starting to sound like Street Fighters) but more about that later. Every two levels









there is a shop. This is where you choose your local friendly psychopath. When you select one of the volunteers, measurement bars show health, intelligence, skill and speed.

On these measurement bars is shown the potential maximum of that particular aspect and the actual level. The potential level of the navvy's intelligence, for instance, will be relative low but this can be increased by "buying" him some intelligence when you have the option to go shopping.

Also on this shopping screen are facilities to buy extra lives, increase any of you attributes and buy other special skills like monster repellent and the like.

After you have chosen the character you want you have to choose one for the computer, assuming that you aren't playing with a friend. The amount of intelligence the character you choose has dictates how much he gets involved.

If he is relatively thick then he will tend just to protect himself and ignore you. However, as the game wears on he will begin to get a little more involved.

You view the game from a slightly offset plan view. To progress through the level you must find silver sets of keys which will open doors and passageways.

Just because there is a natural progression through the game with the existence of the silver keys, this doesn't mean it becomes uninteresting. Gold keys open up different sections on the games revealing money and special powers.

At the end of the level you are shown an appraisal screen which tells you how much of the level you discovered, what percentage of the gold you picked up and who did the most work. How much you do on your particular level decides how much of the treasure you get.

There are all manner of beasties from trolls to gigantic hands which follow you around but on the whole they are pretty easy to dispatch. Remember to hang around after you have bumped them off, though, because they always leave a bit of money lying around.

Graphically Chaos Engine is pretty flawless – no matter what all the other magazines say about it looking typically Bitmap-esque. The screen scrolls excellently around your character, plus you don't have to put up with waiting for your partner if he goes off-screen.

If you leave your partner well behind he will materialise next to you after a couple of seconds. This doesn't apply if he is a human character – if he wanders off-screen, you have to wait for him to catch up.

To get through the levels, not only do you have to find all the silver keys but you have to activate the nodes. These are large monolith-like things which seem rather uninteresting until you shoot them a bait. Then they turn into massive pulsating marital aids.

You have to activate all of these to get the exit open to the next level. On later levels there is more than one exit so it can get a little confusing, but this doesn't detract from the fun.

Ben

**VISION**

Clean, nicely styled – what more should you expect?

**AUDIO**

Awesome soundtrack, nice and loud.

**PLAYABILITY**

Easy to get into and fun.

**ADDICTION**

Definitely, there's always more to get back to.

**90%**





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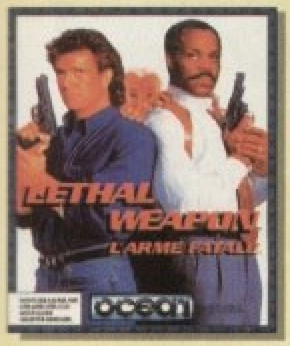
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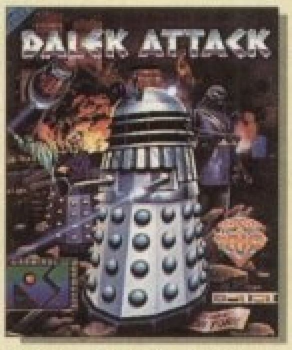

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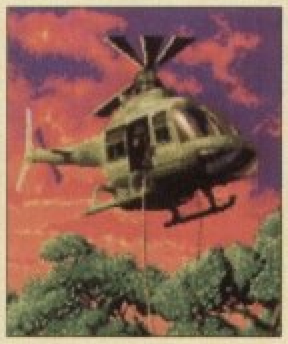
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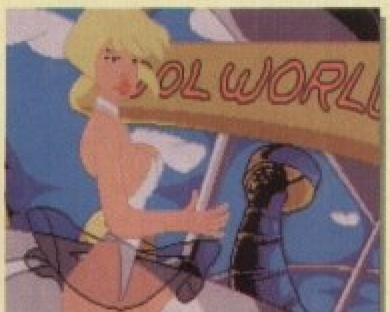

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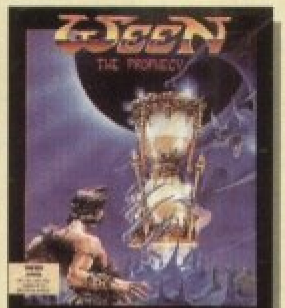
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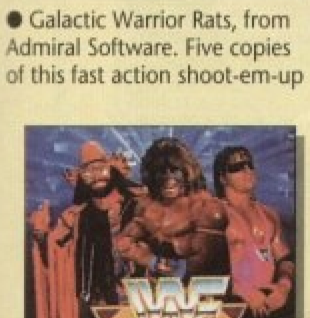
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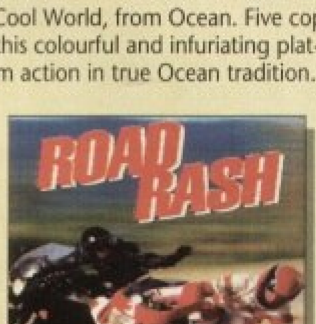
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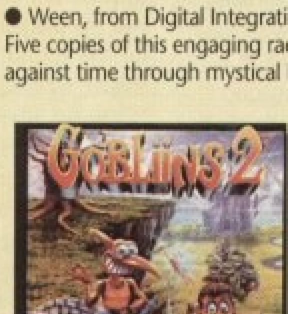
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## ENTRY FORM

### Circle the correct answers

*1* Which alien phoned home? was it...
**a** ET **b** CB **c** RSPA

*2* What was the name of that totally unbeliveable program with the car that talked and had a flashing red light on the front? was it...
**a** Piper at the Gates of Dawn **b** Street Hawk
**c** Knight Rider

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**The star of the show, it's Krusty**

I've got two words to say to you, and they are... Bart Simpson. That yellow haired freak has got a lot to answer for. OK, so the Simpsons is still the funniest cartoon I've ever seen in my life. That's fine, but we the general public were constantly bombarded with hype and merchandise.

Merchandise like Bart alarm clocks, Bart bubble bath, Homer hair spray, stickers, badges, T-shirts, etc etc. I could go on for about six pages. The mischievous one even brought out a single and an album, both of which were absolutely abysmal. The computer industry latched on to the fact that anything to do with the Simpsons was selling like hot cakes, thus ensuring plenty of software for your home computers and consoles.

The first effort to raise it's ugly head was Bart vs the Space Mutants and apart from the amazing cartoon introduction there wasn't a lot to be said about it, apart from that it was a fairly standard platform romp and quite a sorry affair.

Then with a crack of thunder, the Simpson phenomena died down. No publicity, no news, no nothing. The kids had turned their beady little eyes to something else as they so often do.

The gaming news had also gone to an early grave, but slowly and surely there was a revival starting to happen. Bart's Nightmare had made a few waves and caused a big splash with its outstanding graphics and sound on the Super Nintendo. Meanwhile on the Sega Megadrive, a cartridge had started to sell very well. It's name? Krusty's Super Fun House.

The game wasn't as much to do with Bart Simpson as the others. Krusty's is more a spin-off, rather like A Different World when compared to the Cosby Show. As die-hard Simpson fans will know, Krusty is a clown who looks similar and is just as psychotic as the clown out of Stephen King's It. He's also Bart's hero. Krusty has his own TV show and appears alongside Itchy, Scratchy and Sideshow Bob. The plot behind the game is simple. Krusty is in trouble because rats have invaded his fun house and are beginning to run riot. He has to guide the rats to the deadly traps controlled by Bart, Homer and other such Springfield favourites. Easy? Nah, not very!

Krusty's Super Fun House is a mixture between a platform and a puzzle game. The puzzles vary, but the object ultimately is to kill the rats. The killing changes with each level. The rats can be zapped with electricity, burst like balloons or squashed like tomatoes. It's all in good cartoon fun though, so the RSPCA and Mary Whitehouse can stop complaining and relax.

Not only does Krusty have to splat, squash, blow up and burst the rats, he also has to beware. Dotted around the place are slimy snakes, pink flying pigs and laser firing aliens all of which are in league with the rats and will do Krusty some damage if he goes to near them. What possible weaponry could Krusty have? Machine gun? Knives? Flame-thrower? Inter-Continental Ballistic Missiles? Hey! – Krusty's a clown, so the red nosed one is armed to the teeth with custard pies. Very lethal.



**Knock Knock! Who's there? It's the gas man, I've come to read your meter...**

Will Krusty's Super Fun House fall down or has it got good foundations? Overall, it's an excellent puzzle/platform game. The graphics are great and to tell the truth I can't tell any difference between the Amiga and the Megadrive version. The same goes for the sound. Those with a musical ear should, err write to Esther at That's Life.

Krusty's is very simple, but some of the levels are downright fiendish. Control method is no problem – even my dog could play it. It's quite addictive for the first few days, but a month after purchase if you had a choice between Krusty's and something else you might just pick something else instead. The price is a bit steep at just under £30 – perhaps Acclaim still thinks it's the Sega version.

If you're looking for something to tax your brain a bit and you're feeling pretty flush then look no further than Krusty's, well at least until Lemmings 2 comes out. Aye Carumba dudes.

**Jonathan**

VISION
GGGG●
Wonderful graphics identical to the Sega version.

AUDIO
GGG●●
The tunes are a bit annoying, but can be turned off.

PLAYABILITY
GGGG●
Simple, but fun to play and easy to control.

ADDICTION
GGG●●
Quite addictive, but beware – it's tad expensive.

80%



**Now who would live in a Super Fun House like this?**



**And the rat went splat! Bart gets mean and angry...**

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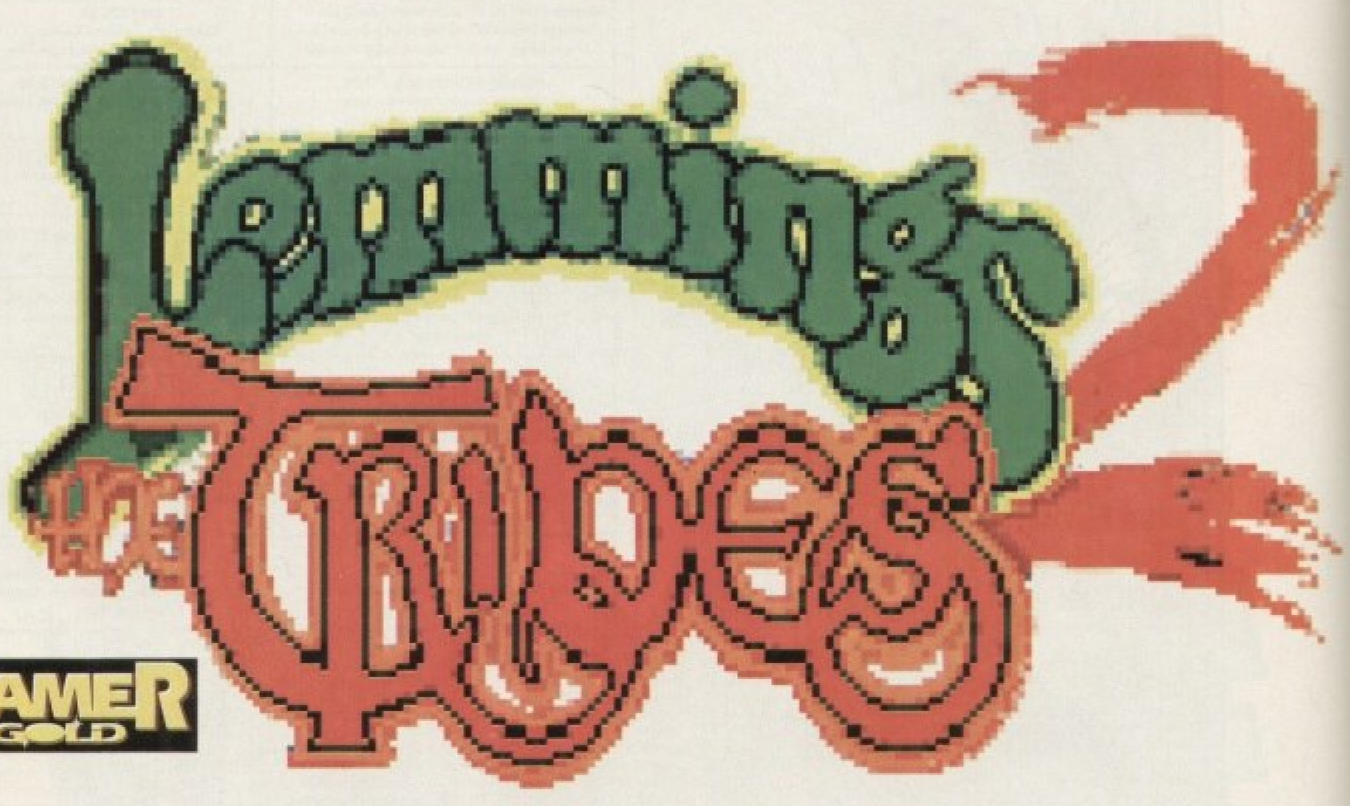
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Oi! You! Yes - you there with the big nose




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Have a look through some recent back issues of your Amiga magazines. Not just this one – check them all. Scan throughout the games sections, paying particular attention to the puzzly efforts of the last couple of months. Just for a giggle, count up how many times a reviewer has said something along these lines...

"All in all it's a good game, and should keep you satisfied, at least until Lemmings 2 arrives."

Have you done that? What? Twenty-six. No – just a minute – what about that one there, and the one just past the – oh, and don't forget that one, and...

Everyone, it seems, has been waiting with bated breath for the second coming (if you don't count Oh No!) of the green-haired stage divers since about... well, since before I arrived, anyway. The dozy little beasts delighted the entire gaming nation first time around, setting a new standard in the puzzle genre that has never quite been matched.

Such was the impact, the playability and the plain, simple bare-assed fun of it all, that the question hovering on the lips of, I guess, almost everyone, is how could DMA possibly come up with something better?

Rumours have circulated of course. First there was speculation that the sequel would contain a massive 8,000 levels. Then it was said that Lemmings 2 would never come about, and that Psygnosis, in keeping with the theme, had plans to release a game about Oxford University students.

There were even those who ventured that L2 would be the first virtual reality game for the home computer whereby players wandered around spooky rendered landscapes, suffering actual death by electrocution should they fail to complete a level.

These proved unfounded – Lemmings 2 has indeed arrived in all its glory, sporting new Lems, new skills, new levels. But let's start at the beginning...

When we left them, the Lems – having clambered, clomped, jumped and fallen their way through level after frustrating level – were comfortably and deservedly settled on their new island home.

Of course, like any civilisation, they had varying ideas as to the way they wanted to



**Ee, you remind me of meself when I was your age – ugly little bugger I was**

lead their lives, and being a friendly – if not particularly intelligent – bunch, decided to split into tribes and inhabit separate parts of the island.

The cute animated intro features a grandpappy Lem taking up the story, relating it to a young pup Lem. He explains how a magical talisman – their protector – was split into



**Hey – that's David Vine with a wig on, that is!**

12 parts when the tribes went their separate ways, so that each group could rest easy in the assurance that they would come to no harm (they come to plenty of harm when I play – believe me!).

Now for some reason – Judith Chalmers is on her way with a film crew probably – the Lems must move again; they can't go anywhere without their talisman though, and not surprisingly perhaps, the pieces have become lost throughout the fair Lemming Isle.

That's the story, and it's up to you as usual to guide the creatures through the levels to safety. It's a bigger game this time, and more thought has gone into the way in which it's structured.

There are 12 tribes of Lemmings, each inhabiting their own little piece of the island. Every tribe needs to complete ten levels, upon which they are rewarded with a vital bit of the talisman to fit onto the others.

If you were delighted by the animation of the original Lemmings, then wear an old pair of trousers or shabby skirt because the chances are you'll make a mess when you feast your eyes on the new extravaganza.

Animators Gary Timmons and David Osborne have really gone to town on the loves of their lives, creating dozens of new comical situations. As we hinted in our preview in February, the sprites are the same size as ever, but the whole shebang is just full to busting with brand new abilities.

Whereas previously there were a total of eight attributes to aid the cause, the Lems now come complete with a stonking great 52 abilities! Not all of these can be used at any one time, for practical reasons as well as programming ones, – instead it depends on the type of Lemming as to which abilities are available.

Forgive me if this sounds convoluted – you'll soon see what I mean if and when you buy the game, and you should, oh, you should...

All the old abilities are still in use, but as well as the new ones, there are certain situations where a combination of skills is




**It might not be San Tropez, but it's home for our green-haired chums**




Long haired chilling dudes, famed for their lazy stride and surfing and swimming abilities.




Like true boy scouts, these guys are always prepared – right down to the rope and grappling hook.




Complete with leopard-skin loincloths, watch out for the ones with the clubs!




The old favourites, still a hell of a lot of fun.




These funny looking chaps have a good throwing arm, and like to take the odd ride in a balloon.




Get a good run up and try your luck at the pole vault. If you're still alive, have a bash at hang gliding.




A highlander wouldn't be a highlander if he couldn't play the baggies!




These sinister beasts only come out at night – sort of a Lemming SWAT team.




You haven't lived until you've seen a Lem on a flying carpet.




Flying carpets a bit too slow? Try a jet pack then!




Bows and arrows were the order of the day, back in the good old days.




My favourite – bring your ice skates, have a snowball fight and finish off with a brisk whizz on the piste on skis.

needed, or is just good fun to watch.

For instance, use the running and diving abilities together and you should see something worthy of an Olympic gold medal!

Passwords are out this time – instead the game can be preserved at any point by saving it to disk. Although the idea is to liberate the tribes of Lemmings one at a time, it isn't necessary by any means to make your way through the 120 levels methodically. If one aspect is proving too difficult, simply save your game and switch your attention to a different tribe.

As if all this wasn't enough, the levels are generally larger than before, and the scrolling now moves vertically as well as horizontally, making for some very strange looking and tricky levels.

It's more important than ever to save as many Lems as possible, because the total is carried forward to the next level, and as anyone who's played before knows, the more you have, the better your chances of making it through.

When a level is complete, the amount of



**The self sufficient Lemming village – all roofs are made of Lemming hair**

Lemmings saved dictates whether you are awarded a bronze, silver or gold medal, and when a whole tribe is safely through, your skills as a saviour result in a similarly coloured piece of talisman.

The ultimate challenge, then, is to put together a completely gold talisman, but unless you're some kind of Lemtastic genius, this is about as likely as the Queen and Ken Dodd getting together to fill out their tax returns.

Ooo-kay – what now? Oh, I don't know. You know the story; you've heard about the new Lemmings, and you already knew the basic idea before you even turned to this page. There is just so much more to this game that I could take up the entire mag if I went into the minutiae.

Suffice to say that the compo shop owners will be beating people back with a very grubby stick indeed just to reach their premises when this hits the shelves (which it should have done by the time you read this).

In fact, all in all it's a good game, and should keep you satisfied, at least until, erm, Lemmings 3 arrives.

**Paul**

**VISION**

Colour manic, finely detailed and fun fun fun!

**AUDIO**

Funky, funny, frivolous, fantastic tunes.

**PLAYABILITY**

So simple even Dan Quale could under stand it.

**ADDICTION**

So addictive you'll forget what the outside world looks like!

**92%**

When I first started writing on computer magazines I worked for a PC magazine which has long since disappeared. At that time games for the PC were more or less unheard of.

There were the usual frogger and space invaders and there was plenty of shareware around but it was all pretty dodgy. The only game worth playing then was Wing Commander.

It came on about ten disks and took about an hour to install – and if you didn't have a hard drive you could forget it, because playing from disks was nigh impossible.

And it wasn't a bad game. If you had a fast enough PC and a sound card you could really get into it. Now



I wonder what's for tea? reflected Billy



The barracks, sweaty men and dirty underwear

## Come fly with me

# WING COMMANDER™

MINDSCAPE ▪ £34.99 ▪ 1 meg ▪ Joystick ▪ Out now

it has been ported over to the Amiga, but how well?

The packaging, manuals and so on are identical to the original, only instead of ten disks there are two. Even so I still installed it onto the hard disk just so I could get the most out of the game.

It begins with a conductor and his orchestra doing their stuff, but it doesn't quite pull it off. What stood Wing Commander apart from the rest of the shoot-'em-ups on the PC were its interactive characters.

You could saunter up to people in the crew bar and get useful information about the missions you were about to fly. Not only were the people in the bar friendly but you flew with an intelligent wing-men (or woman) who would attack the enemy ships with as much vigour as yourself.

They might not always have been as effective as you, but they did usually get to shoot down at least one baddie per mission.

The original programmers tried to make WC as film-like as possible, so the bar is quite lively; the barracks have leaks in the roof and when you are killed on a mission you have a full burial – in a space suit with a laser salute.

You begin your career as a very lowly officer flying pretty crappy ships. But as you amass more and more successful missions you are promoted and you get to fly better and bigger ships on missions even more suicidal than the last.

Graphically WC fails miserably. For some reason the converters have tried to keep exactly the same style of graphics as the PC. This doesn't work, mainly because of the different nature of the machines. Amigas simply cannot handle the amount of information needed to zoom in on and show details of the ships you are flying against.

The result is painfully slow, badly drawn graphics which resemble larger brown smudges on the screen when you get too close in.

Controlling your pilot around the barracks is simple – everything is joystick driven – but my main moan is the control of the craft itself.

Maybe I'm being a little snotty but I have played Elite and all the millions of clones that it has and never come across a flight model as unreal as this.

When you are flying you have the normal joystick movement down for up and vice versa – no problem there. Now moving the joystick left or right you would think would give you some sort of pitch in your chosen direction or even a circular spin as with Elite, but no. You move steady as a rock to the left or right which completely destroys the whole effect.

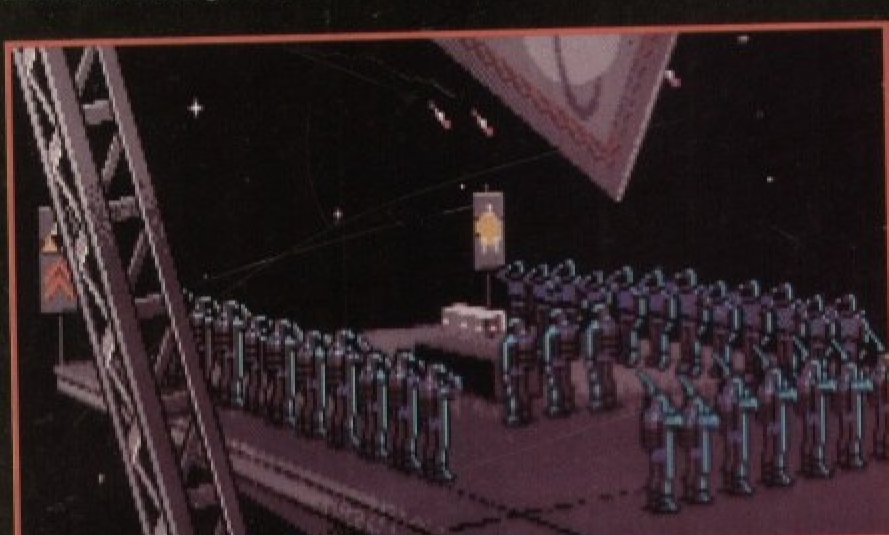
WC does actually play quite well apart from the discrepancies in the control. The battle sequences are well set up and don't take too long.

You are equipped with lasers which you use most of the time. They are generally pretty effective so you don't need to waste you missiles unless you are getting a really good stuffing.

For the section when you are not actually doing anything of any use you can just puts on the autopilot which takes you forward to the next battle or meteor storm.

At the end of the day though, Wing Commander is nothing more than a quick diversion and definitely not worth the asking price.

Ben


It's this week's space football meeting

VISION

Too much like the PC version.

AUDIO

Unimpressive, boring sound effects.

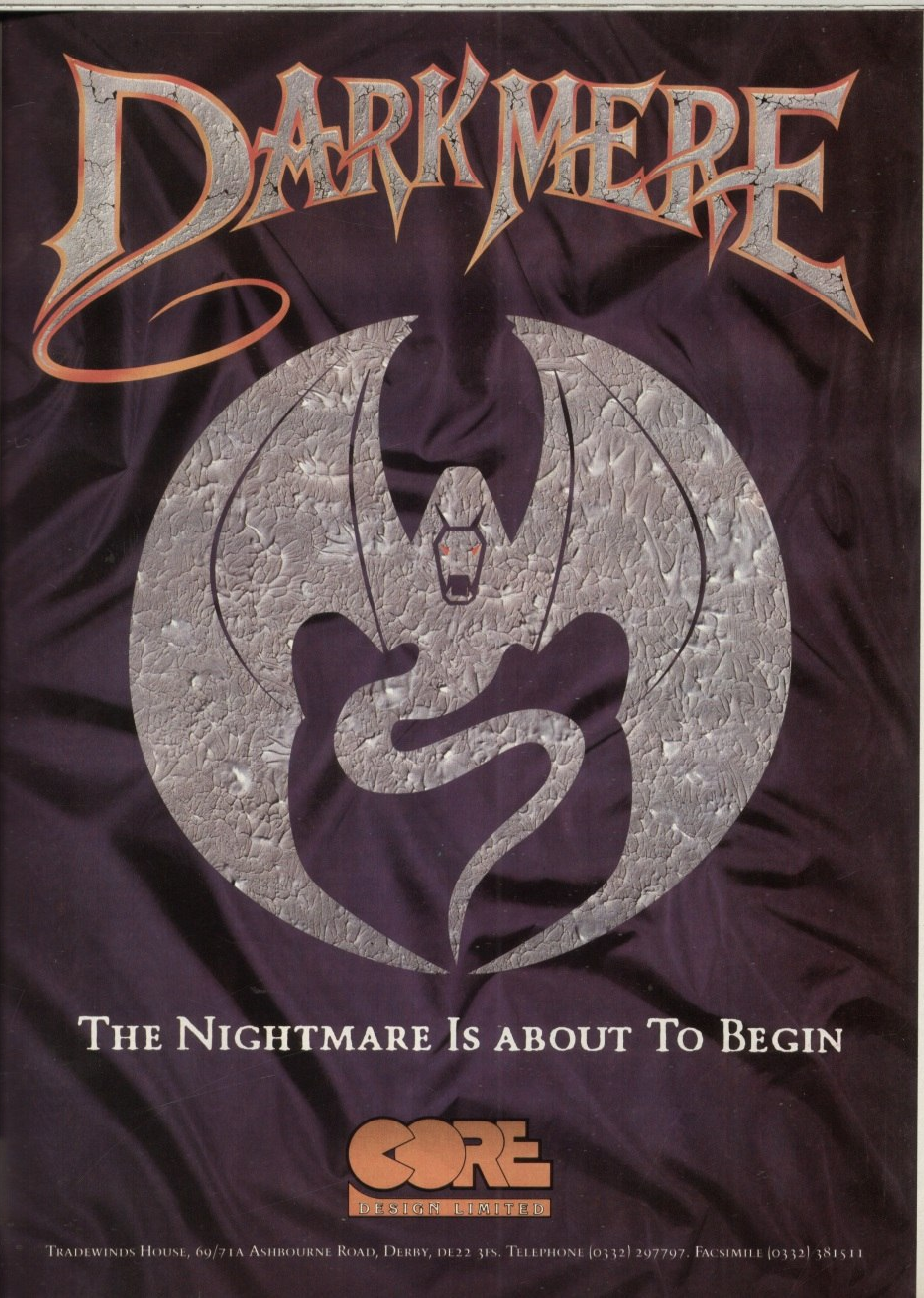
PLAYABILITY

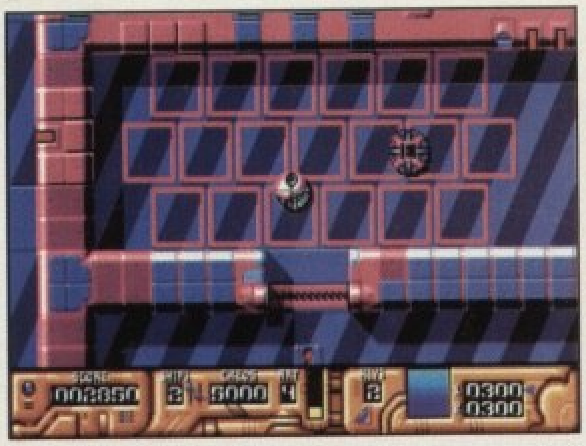
Very playable, good fun.

ADDICTION

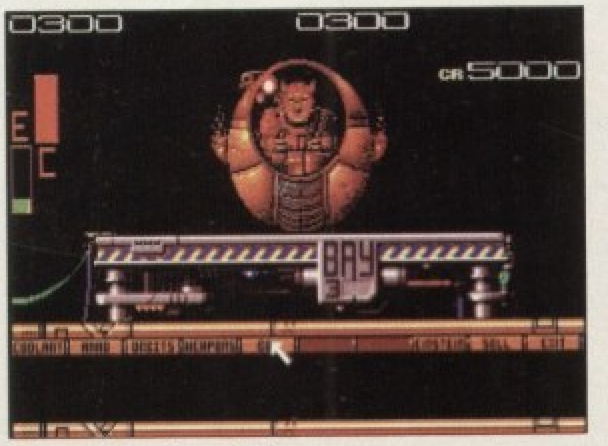
Strangely so, but not that engaging.

73%


DARKMERE
THE NIGHTMARE IS ABOUT TO BEGIN
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Not enough room in here to swing a rat!



The shop, but no cheese butties



What are you smiling at, ugly 'ed?

B-Movie flashback, it's the...

# GALACTIC WARRIOR RATS

**ADMIRAL ▪ £9.99 ▪ ½ meg**
**Joystick ▪ Out now**

There comes a time in a programmer's life when there is no point trying to think up poignant storylines for games any more. Spinning endless yarns which span centuries becomes irrelevant as do your attempts to work your average gamer into a cold sweat before the game begins.

Why bother with ecological disasters, space aliens who have travelled for millions of light years looking for a home, and the like?

Instead, why not have three intelligent rats mutated by an explosion on board a supply ship, name them after famous scientists and let them go round wreaking havoc in outrageously heavily armed vehicles? Why not indeed?

As you have already guessed, the three psychotic, not to mention badly named, rodents are there to do your bidding. They have to hack, grind and splatter their way to the sixth level to shut down the self-destruct sequence which is to blow up the planet.

The six levels are maze-type affairs crammed full of baddies. Your ship is a sort of circular looking thing which skims around. Not very fast, I might add...

GWR presents nothing new to the seasoned gamer, it's just another angle on the genre of plan-view shoot-'em-ups. You control all three – although not all at once – and it is you job to go around the maze shooting anything and everything which should come your way.

The only new additions which set GWR apart from the run-of-the-mill budget material are the in-game computer (now a compulsory addition for these type of games) and the wide range of power ups.

With the destruction of the suspiciously stupid minions comes money for you to spend on more bolt-on goodies. At the beginning and end of a level you have the opportunity to buy things for your ship. This section is mainly used for buying bigger and better guns for yourself but there are also energy pods and "orbits" to be had.

Orbits are the things you commonly get in shoot-'em-up, they spin round you and shoot or just blow things up when they collide with them.

If you are getting really short of ammo or energy when playing a level there are two things you can do. One, you can go back to the mother ship but this means you have to travel all the way back to where you started from or two, find a computer where you can stock up. The in-game computers aren't as detailed as some of the other games, and there's no sub game – always a nice little touch.





Come to mummy, the mother ship

One of the best thing about the power-ups is that you can have a different configuration of weapons on all three of your ships. Of course you can only buy what you can afford. The bigger the price the bigger the weapon.

There are six levels to the game, each of which is pretty hard to say the least. The vast majority of the alien force are a pushover but as the levels progress they become a lot tougher, shooting more homing missiles.

That's one aspect I really did find attractive – the aliens aren't as badly equipped as they usually are. Most of the time they have what might as well be a pop gun compared to your whacking great cannons and homing missiles.

Some of the bigger roving alien ships possess homing missiles which can be a real pain in the backside but your main worry are the gun turrets in the floor of the maze. These can throw all sorts of nasty things at you.

GWR isn't what you'd call a complete stonker of a game, but the excellent gameplay does tend to make up for the weak points in other areas. If you like budget shoot-'em-ups then this would be a good buy. Have a look for yourself is what I say.

**Ben**

**VISION** (3/5)
Clean, well drawn graphics.

**AUDIO** (3/5)
Some good spot effects.

**PLAYABILITY** (3/5)
An old idea but well executed.

**ADDICTION** (3/5)
Very modular, will keep you coming back.

# 70%

# A BLAST FROM THE PAST

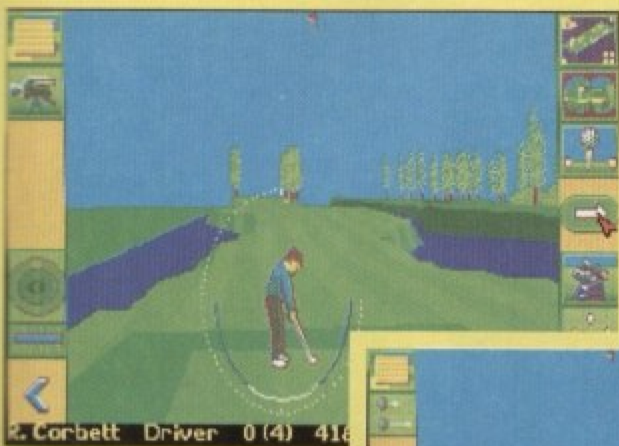
## Microprose Golf by Microprose

**Take a trip down memory lane as Jonathan remembers the good times and lets them roll...**

Most golf games unfortunately suffer from a bad case of the yips. You load them up and everything looks OK, but as soon as you hit the ball off the tee all the excitement fades as you realise that the play is about as realistic as Terry Wogan's wig.

Never mind, because way back in November 1991 Microprose Golf arrived and proceeded to change the future of golf games as we then knew them.

The biggest thing Microprose Golf had going for it was the sheer realism of a round. In fact, if you'd donned a funny hat and some striking chequered pants you could almost have been there.



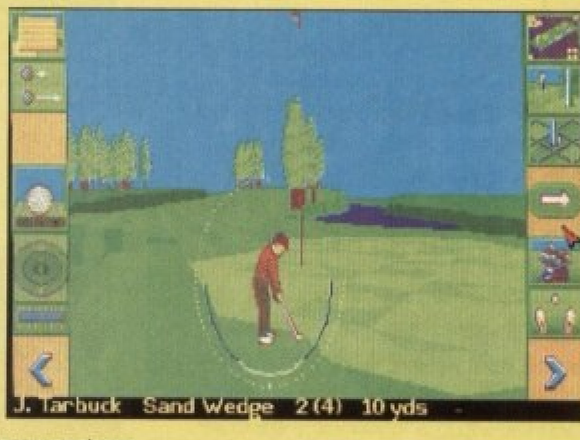




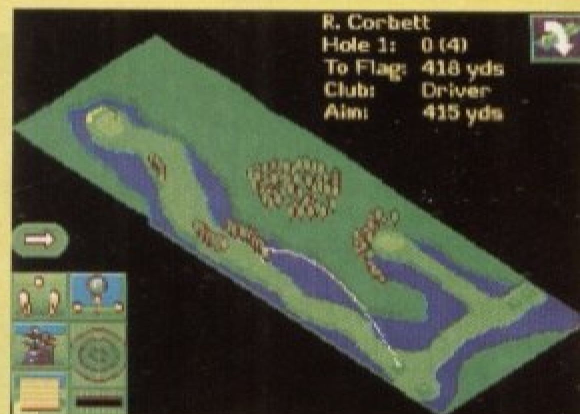
As well as being realistic, it is probably the most friendly and easy to play in the entire universe.

The whole control system is handled via icons except for the actually hitting and putting of the ball, which yields to a couple of presses on ye olde mouse.

There are six courses to choose from all of which are presented in wonderful 3D. In most golf games, you hit the ball and you see it fly off into the distance and then you lose sight of it, but in Microprose Golf a mini camera follows the ball, so you see your shot in full.




And with five different camera angles to choose from the fun is endless. If only there was a record option, you could then send your golfing mishaps into Jeremy Beadle and have the whole nation laugh at you.




Microprose Golf has brilliant 3D graphics, simply oozes tons of great gameplay, is addictive as an addictive thang and will appeal to golf fans and non-golf fans alike.

## Wizball by Ocean Software




OK, I'm sure you're all familiar with Sensible Software, the company behind such recent hits as Sensible Soccer and Wizkid.

Well, a long time ago in the beginnings, when the Amiga was just a little lad wearing shorts, a game appeared from Ocean entitled Wizball.

It is about a wizard and his cat who by some strange happening have found that their world has been robbed of all its colour.

They both have to collect paint that is running rampant around the Wizworld.

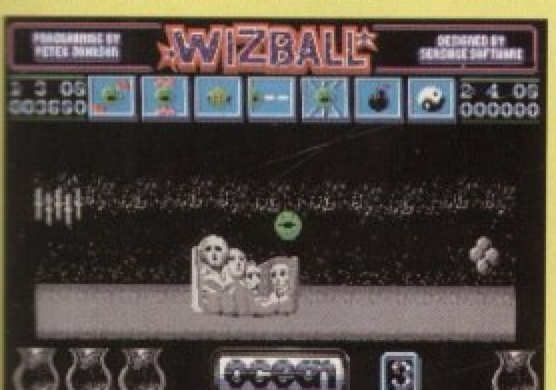
The wizard transforms himself into a little green ball, hence the name of the game, Wizball.

The Wiz has to then fend off lots of alien beasties as well as collecting enough paint to cover the world of Wiz.

Taking into account how old the game actually is the graphics are astounding and would even put some of today's products to shame.




You can't fault Wizball, simply because it is so original. The sound effects and music aren't that hot when compared to today's games, but way back then they sounded amazing.




The control of Wizball is very clever too, because when in his ball state he acts exactly like a ball would.

Wizball is more addictive than most other games, although it isn't the easiest game in the world.

I don't think there is a category that I could put Wizball into – it has elements of a shoot-'em-up, but it's not technically one.

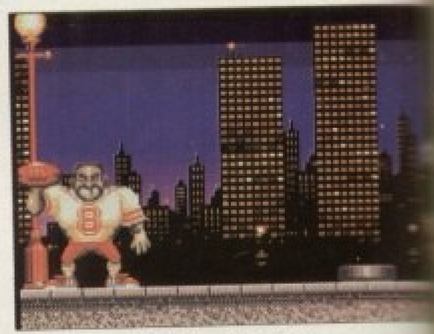



Whether it's a shoot-'em-up or not Wizball is still firmly at the top of my top ten list of all time favourite games. An absolute classic.

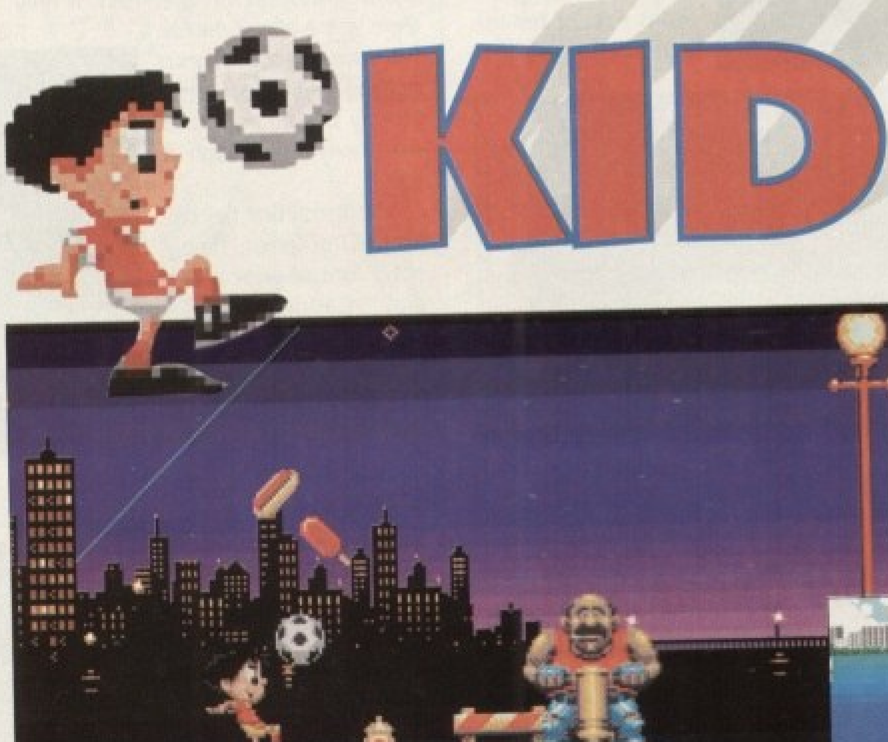
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# SOCCER KID

## Is Jimmy Hill's chin really that big? Jonathan Maddock provides the answer while he takes a sneaky peek at Soccer Kid by Krisalis



Kid shows off his talent to a man known as "Fridge"! Strange



Can you dig it? Soccer Kid goes grrr...





I could make a tasteless joke about crabs and balls, but I won't (Phew – Ed)

In my humble, but accurate opinion there are now enough football games. Sensible Soccer and Kick Off 2 are more than adequate for my footballing needs. What footy fans really want is something different.

I think Krisalis, the company behind such great football hits as Manchester United, Manchester United Europe and John Barnes European Football, have been thinking along the same lines.

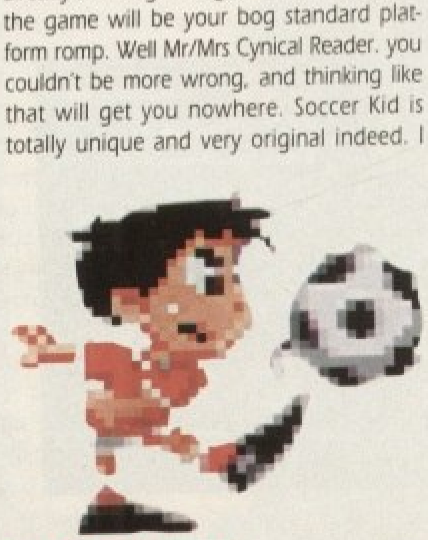
Soccer Kid is something different, because for starters it's a platform romparama. I bet other software companies are kicking themselves.

Soccer Kid was going to be entitled Football Kid, but was changed at the last minute because it was felt that the game would appeal more to overseas buyers when converted to the consoles with its new moniker. Hmm, bloomin' cheek if you ask me. The great game was called Football and that's the way it's going to stay.

The provisional story behind Soccer Kid is like this. The cup has been stolen by an extra–terrestrial. This alien, though, doesn't want to phone home, much preferring to cause chaos. The cup has also been broken into six pieces and dropped in different locations around the world.

Soccer Kid, being the conscientious chap that he is, has taken it upon himself to travel the globe to collect the pieces and deliver the reassembled cup to America in time for the 1994 competition.

If you are a bit of a cynic, you're probably already sneering in disgust and thinking that the game will be your bog standard platform romp. Well Mr/Mrs Cynical Reader, you couldn't be more wrong, and thinking like that will get you nowhere. Soccer Kid is totally unique and very original indeed. I know this because I've already played a demo and it looks excellent.



To start with, he's got a football, and they haven't cut any corners either. The actual ball is as realistic as possible and in many ways its movement is similar to the ball in Pinball Dreams.

If Krisalis were slackers than they'd just let Soccer Kid kick the ball along the levels, but they're not. Not only can he kick the ball, he can head it, play keepy uppy, trap it, balance on it and even overhead kick it.

The ball is not put in there for sheer novelty value either, but is used to solve puzzles and help get the Kid through the levels. For all those Geoff Banks wannabees out there, Krisalis have included a kit designer, so Soccer Kid can be as stylish as you want him to be – or you can turn him into a complete fashion victim!

There are still plenty of bits to be added before the game is finished. Other features include power ups, bonuses and secret levels, more sound effects and loads more enemies.

Does anyone remember those football stickers that people used to collect at school? The ones that guaranteed shouts of "neeeeed it!" and "got it!" at lunch time?

Well apparently, the stickers have now changed to cards. Thus Krisalis have drafted this idea into the game. Soccer Kid now has to run about the level collecting football cards to gain access to bonus levels and, of course, the missing World Cup.

The game has a very consoley feel to it – the graphics complement this fact and are very cartoon-like. Everything from the main character to the football to the end-of-level guardians are beautifully drawn. Speaking of the nasties, they range from American footballers to Sumo wrestlers and are wonderfully animated.

Well, there's Soccer Kid and personally I think it could go straight to number one. Keep a look out for it and expect a full review in Gamer in the next couple of months.

Right, down to serious business, is Jimmy Hill's chin really that big? Yes, it is. Thank you.

# the source 2

# 90 MINUTES

**With the war for top footy game as hot as ever, Dino Dini – not one to rest on his laurels – is determined to knock the sense out of Sensible Soccer once and for all. Paul Roundell kicks off to Cambridgeshire to try and make sense of it all**

Dino Dini. It even sounds like a footballing name doesn't it? I know the guy's a programmer, but you really can imagine someone of this name hurtling down the left wing, skipping past defenders and placing a delicate chip into an unreachable corner of the net, can't you?

In fact – talent that he is – I do wonder if he would have enjoyed the same success had he been called, for instance, Bernard Scroggins or Cecil Plod.

But anyway, successful he has been, and surely no-one can deny this of the man responsible for the mega footy duo Kick Off and Kick Off 2.

Kick Off was undoubtedly the best



Dino Dini. About to take footy fans by storm yet again

football game of its time – its successor, despite the difficulty in mastery experienced by many beginners, has now become damn nigh legendary for its sheer controllability.

In fact these two games were to all intents and purposes the only real choices we had if we wanted a fast, controllable, realistic footy game.

Until about nine months ago that is, when Sensible Soccer arrived on the scene. Sporting new options, a different perspective and a sense of fun, it won oodles of followers straight away and sparked off a Mario versus Sonic-like war among the two sets of fans.

Well Dino Dini has become used to being king of the castle over the last couple of years, and he's not about to relinquish that crown to a bunch of young upstarts from just up the road.

He's been working flat out for about 18 months, and in just a few weeks' time you'll be able to feast upon the fruits of his labour in the form of 90 Minutes.

Don't be fooled by the name – 90 Minutes is the third game in the Kick Off series, and no mistake. Dino has recently parted company with Anco though, who published the previous Kick Offs, to team up with big boys Virgin, and due to some internal wrangling that I was too polite to ask about, the KIck Off name stays with Anco.

Dino has completely re-written the game using more efficient techniques than previously, and although it was still incomplete when I saw it, several new elements are in evidence.

Inertia, or acceleration, has been applied to the players, meaning that rather than beginning a run at full tilt, a player will now need about half a pitch's length before he reaches top speed.

Perspective has changed also. There is still the option to play your game with a view of only a small part of the pitch (now one sixth instead of one twelfth), but you can also view from a much higher angle which gives you an outlook on over half of the pitch.

These views can be switched at will throughout the game at the tap of a key, which is a nice touch – handy for corners, free kicks and the like.

Speaking of these, Dino has eliminated the need for guesswork in such matters by including a, erm... trajectory planner thingumajig which generously indicates the line your kick is going to take.

A criticism levelled at KO2 was the sheer infallibility of the goalies – it was as if they'd never heard of the Dave Beasant syndrome (Dave who? – exactly!). Not only has this been amended, but the whole game displays a greater intelligence.

An example of this is in the referees, who discriminate between red and yellow cards not only in severity of the foul, but also as to whereabouts on the pitch the incident took place.

The crowd are far rowdier than ever before, and rightly so too as there are loads more variations of teams and kits to choose from – though why on earth they'd want to cheer along with "Albion" is way beyond me.

Couple all of these elements with the existing playability of Kick Off 2, add a couple of new pitch options and a few more skill settings, and what you get is a potentially stonking game that seems set to take footy fans everywhere by storm.



A larger overall view is there if you want it



Alternatively, just play like you always did, you old stick-in-the-mud

# Curse of Enchantia

Welcome to the second instalment in this thrilling solution to Curse of Enchantia. Thanks again to Keith Grabban of Bath – I mean, it's his hard work we're cashing in on after all. Now, where were we?...

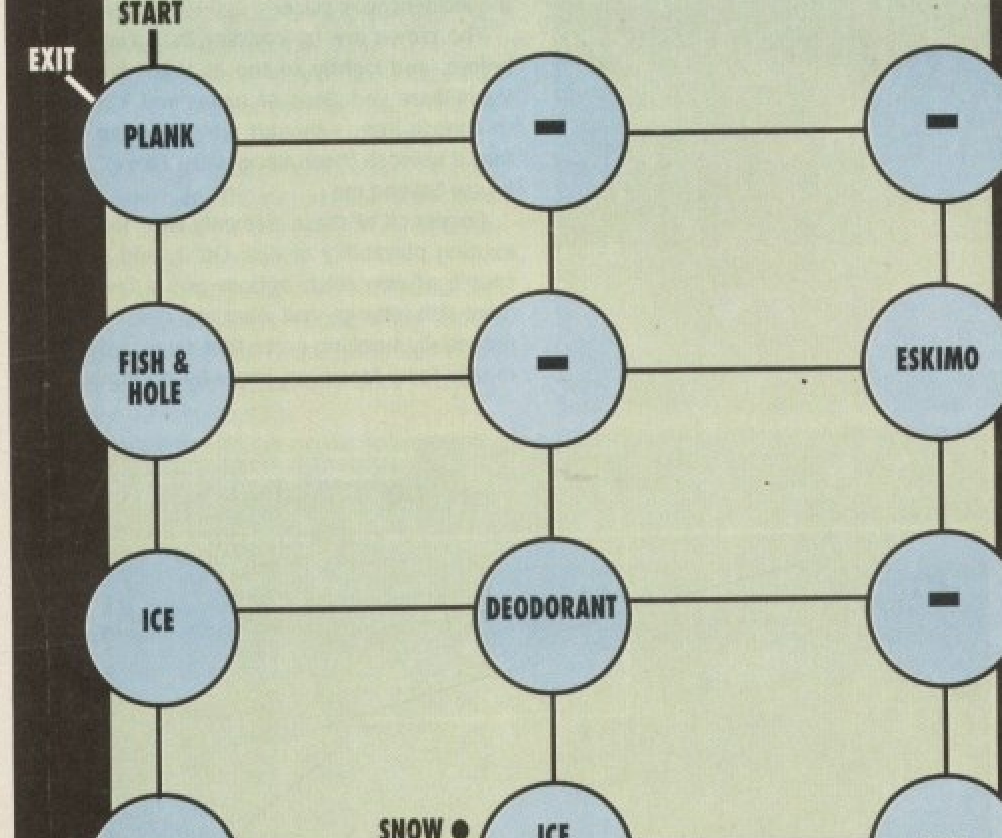
## VILLAGE

Having been transported back to the village, go to Sally See-All. Give money to Seal in exchange for a clue, then go to the square, turn right, and keep going right until you come to Ben's Costume Shop. Go in and give money to Ben, pick up costume and go into the back room. Wear the costume and a door will appear – go through it into Snow World.

## SNOW WORLD

Pick up the plank and go down to next screen. Throw the plank, pick up the fish and go down to the next screen. Go right, pick up and wear deodorant, go right, go up to next screen and give fish to the eskimo.

Pick up the rod, go to block of ice screen, fight with rod and pick up stone. Go to ice man screen, pick up snowballs and fight with snowballs. Go back to the first screen, walk over the sleeping sea lion and shout for help. On emerging from the cave, jump into the boat, and when back on shore throw the stone, whereupon the dragon will take you to the Ice Palace.




## FIGHT WITH WITCH

**When she turns yellow, jump up and walk right. Wait for yellow again then jump up. Keep doing this, avoiding the queen's attacks, until you can walk up the steps to the throne.**

## ICE MAZE

Walk towards the portal, and you'll be grabbed by a large hand – wear the bottle of grease. Continue until you find some matches on the floor, and pick them up. Carry on again to the room with the monster – hide behind the centre pillar until the monster falls asleep, then use the match with foot.

If he (she?) wakes up, hide again until he falls asleep, then fight the monster with the matches, pick up the fire extinguisher, and you'll be back in the village.

## VILLAGE (2)

Go to the square and visit Sally See-All. Give money to seal for clue, go back to the square, continue forward to Mage's, and see the wizard, who will turn you into a pig in exchange for some money. Back through the square, left past Sally See-All, and the guard will allow you past.

## ICE PALACE

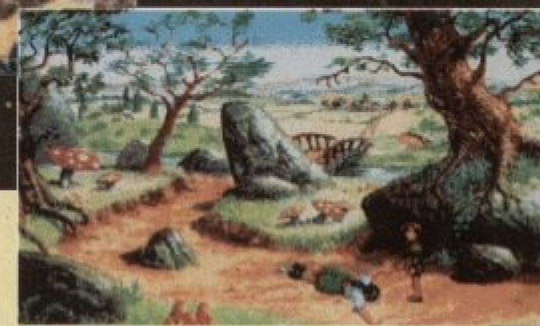
**Look at the icicles to the right of the door, taking notice of the passing penguins. Push and pull the icicles in the same order as the penguins (you'll understand when you see it), and go through the door that opens.**

**Pick up the broom and the dice, and throw the dice and go through the portal. When in the corridor, look for an open portal, go inside it and pick up the megaphone. Go out, walk back to the start and pick up the dice again. Throw the dice and go back into the corridor, find the next open portal and go in.**

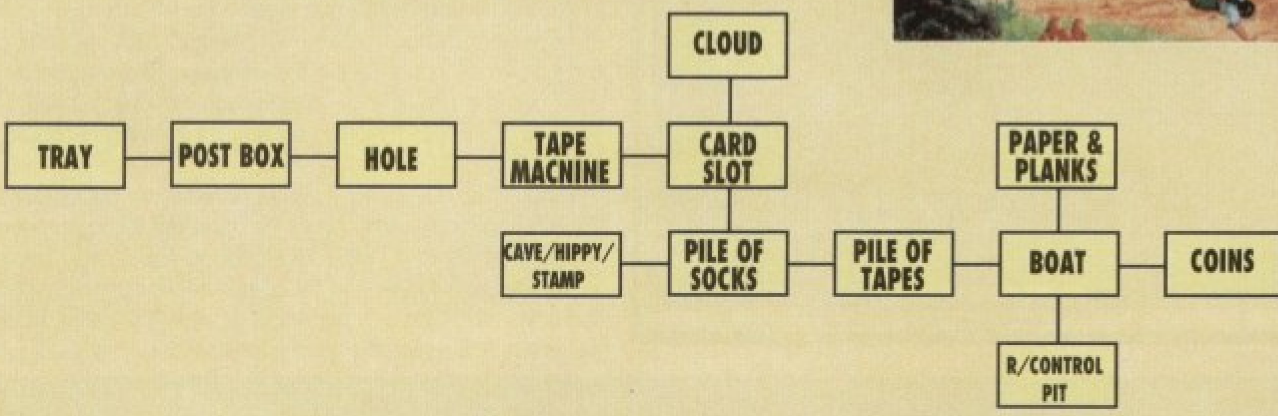
**Go to the icicle hanging down, and fight with the broom. Pick up the icicle and go back to the dice room. Repeat this process, picking up the jack, prism, magnifying glass, and**

# cheat mode





## SCRAP YARD




Ignore the slug band (it's just Pearl Jam in light disguise), go left to the hair, and pick it up. Continue left past the post box and pick up the silver tray. Go back to the slug band and into the screen below.

Go right past the hippy and insert hair into the Sneezy Monster. Go right and pick up stamp from the pile of pens (which you don't actually need). Walk further right and pick up sock, then right again into the next screen.

Pick up blank tape from the pile, go right past the robot to the pile of coins, and use sock with coin to make a cosh. Fight robot with cosh. Enter boat, pick up plank, and walk with plank to just left of centre. Push/pull plank, and it should fall from left to right. If not, try again until it does.

Return to robot and then re-enter boat. Pick up the second plank, and you'll be able to cross the water to the other side. Push/pull plank to drop it, and pick up the paper from the floor.

Now pick up the plank again and walk to the other side. Push/pull plank, and go down to the next screen to the pile of remote units and pick up remote controller.

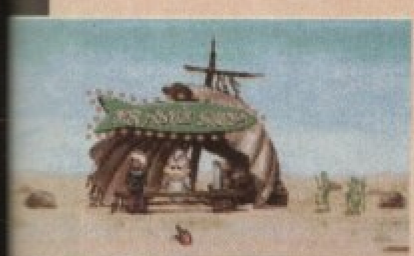
Return to post box screen and pick up a letter from the floor. Use stamp with letter – go right to sluggies, and insert blank cassette into tape recorder. Push/pull remote, and go back to hippy – give him the recorded cassette and enter cave. Shout for help and pick up wallpaper paste. Now go back to the post box screen and pick up letter, putting it into the post box.

Return to the cave where the hippy was and pick up the credit card, go back to sluggies – walk to the right and insert the card into the slot, whereupon you will be transported to a cloud. Click on the far left of cloud, then far right, and repeat this until you're close enough to pick up the marbles.

Now walk off the cloud and it's back to the hippy cave again. Walk further right, and enter the door which appears.

## DUNGEON

Look on wall and throw the wallpaper paste. Push/pull paper, look on the wall and push/pull button, and the gate will open. Throw marbles from the edge of the electric floor, throw silver tray, pick up fan, unlock door with the paperclip and go through the door, following the path to the village.



## VILLAGE (3)

Go straight to the village square, turn left and return to your old buddy Sally. Part with more cash to seal for his obligatory clue. Back to square again, and once more to the Mage's. Give wizard money for transportation to the graveyard.

## GRAVEYARD

Look, then pick up the bone, and fight with bone. On climbing from grave, go right and a vampire will appear. Move quickly to the left of the screen, and he'll fall into the grave.

Pick up shovel and go right – vampire appears again. Go behind him and fight him with the shovel. Right again, and stand in front of the next vampire that appears. Push/pull the gravestone to scare him off.

Continue right, pick up the symbols, go right again and pick up the cross from behind the tree. Sorry about the tedious grammar, but go right again and pick up the coin. Go to gates at far right and pick up the vacuum cleaner. Now return to the grave you first emerged in, pick up bread and garlic and, wait for it... wait for it... GO RIGHT!

On meeting the vampire, eat the garlic, go right, and he appears again. Fight him with cross. Return to gates at the right and old vampy-babes will turn up once more.

Creep up behind him and fight with the symbols, at which point he'll be so cheesed off he'll open the gates. Go through, following the pathway, and push/pull the next gates you encounter. Carry on along the path, and you're in the palace.

**gun from the various portals (you'll need to use the broom again to get the gun).**

**Having done this, insert the gun into the snake's head pulley to the left, slowing the other side to come down. Walk to the right and pick up the grease and the glass.**

**Go to the end of the corridor and pick up the whistle. Use the whistle with the megaphone, fight with the megaphone, and jump to the hole.**

**Go to the hole in the floor on the far right and use the magnifying glass. Now go to the hole on the far left and use the square prism. Come down to the hole on left and use the icicle. Use the glass with the remaining hole, causing the laser to cease. Go to the vent in the wall and insert Jack.**

## SHOWTIME!

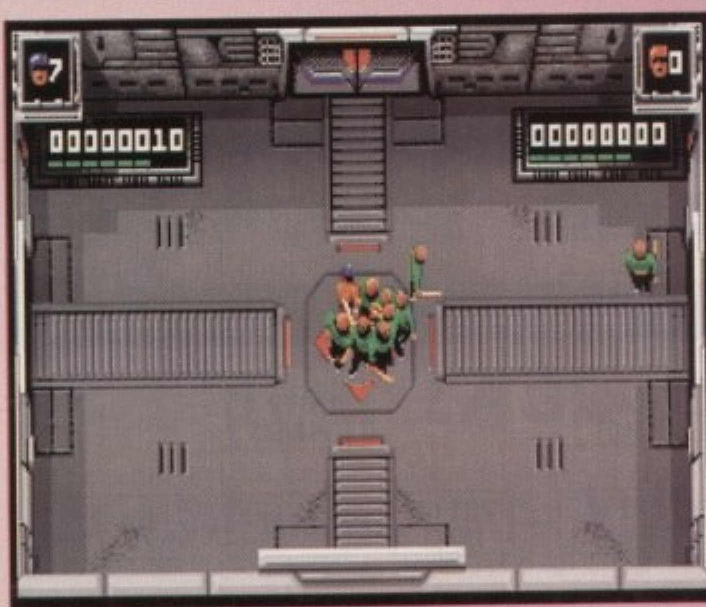
**Go into the room on the left-hand side of the palace hallway. Look under the window and pick up the ring. Return to the hall and go right into the library. Walk between the first two sets of bookshelves and push/pull the book you find – agog! – a secret passage appears. Go into the passage.**

**When the witch magics the ghost, fight it with the vacuum cleaner. When the flames begin, push/pull the fire extinguisher, and when the ice winds appear, fight them with the fan. The witch is now kind of dead. Now simply use the ring with the witch, and after much of a to do, you've completed the bugger!**

# The CHEAP seats

**Apart from turning off all the heating and setting fire to the dog, the next most interesting way of saving money is to buy a budget game. Why not take a quick shufty at these "ten 'n' unders" and let your kids starve?**

## Paul's selection




### Smash TV
**Hit Squad ▪ £7.99**

Killing people – that's a very interesting concept for a game show; I'll bet Noel Edmonds and Les Dennis both have stiff necks from constantly looking over their shoulders at the mere prospect of it.

Well that's what Smash TV is all about, and although it does carry limited appeal, I'd much rather take up the Noel and Les option.

On entering a TV studio in front of whirring cameras and an ecstatic audience pumped with the promise of "total carnage", your job for the night is simple – stay alive!

You are provided with a gun to make the job that much easier, but the main problem are the dozens of crazed loons who chase you with baseball bats, intent on caving in your skull and ripping off your limbs. To make matters worse the perimeters of the studio are patrolled by gun-toting self destructive guards, and there are more than enough trip mines dotted around to ensure that you'll be scraping your brains from the roof should you step on one.

Loads of power-ups are available to make matters more interesting, but really there just isn't enough to do in the game at all – even the shooting bits are very... well... clean looking. It's a laugh for a while, but all the screens are alike, and the gameplay becomes monotonous quite soon. Any more than a tenner would be an insulting price to ask, but as it is Smash TV is reasonably good value for money.




**68%**

### Bignose the Caveman
**Codemasters ▪ £7.99**

Not every game that comes from the Codemasters stables is a classic, and some are even quite poor, but one thing I like about the Codies is the fact that they have their feet on the ground.

They know their market, the games they like to play, and the price they can afford to pay, and they cater to this. Bignose the Caveman is familiar territory for platform fans.

The large conked one and his mates are looking forward to a slap-up Thanksgiving feast, but unfortunately they seem to be experiencing a few problems in the culinary quantity department, in that they have bugger all to eat.

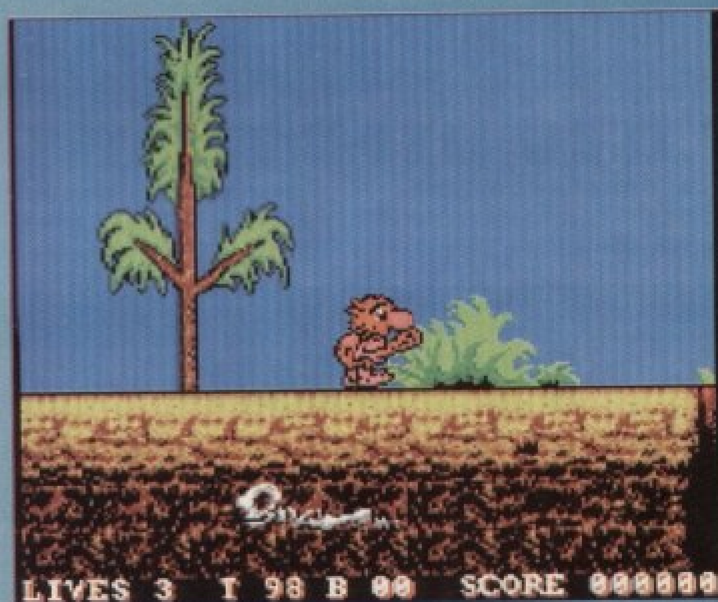
Undeterred, Bignose picks up his trusty club and sets off in search of some grub in the form of a large and tasty looking pterodactyl which inhabits the other side of the island.

Needless to say it won't be a cakewalk – there are loads of creatures on several levels to bludgeon before you reach the goal. Bones and rocks can be collected as power ups, and there are one or two secret zones to discover as well.

Graphics are colourful and clear, sound isn't too bad, and although Bignose The Caveman is far from a gaming breakthrough, it's got enough to keep the younger players happy for a good while.




**72%**







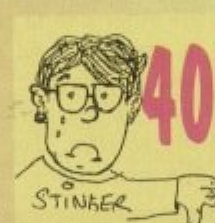
### Pit Fighter
**Hit Squad ▪ £7.99**

I was always under the impression that pit fighting was something to do with big mean dogs – the kind that eat kids – ripping each others faces off after being fed on a diet of raw steak.

Apparently not though. You have the choice of three different fighters, you lucky blighters, whom you pit against all manner of mean opponents in an attempt to become the world champion, or something.

Ty, Kato and Buzz are the Chippendale rejects turned fighters, who like nothing better than to oil their chests before implementing their allegedly extensive repertoire of moves on unsuspecting adversaries everywhere. As you fight through the rounds you will find a few items scattered around that might save your fists – for example, for some bizarre reason you can throw motorbikes!

Graphically the game is far from impressive – dodgy looking sprites flickering around on even dodgier backgrounds. There are a good number of moves to make, it's true, but when success or failure hinges on what amounts to guesswork, this in my book makes the whole affair a bit of a turkey.




**40%**

# Biffa's selection




## Terminator 2

**Hit Squad • £7.99**

The big man said "I'll be back!" and by golly Miss Molly he was right. Terminator 2 did not fare well with the reviewers when it was released way in the dark ages of December 1991.

Gamer gave it a very respectable 40 per cent because that's all it deserved. Despite this it still flew up the charts thanks to a big advertising campaign backed up by lots of hype.

The game itself is a mixture of three elements. It's a beat-'em-up, a puzzle-'em-up, a shoot-'em-up and, err a chase-'em-up, if there is such a thing.

The plot of the game is loosely based on the plot of the film. I have to admit that when it first arrived I was quite impressed by the presentation of, but that all stopped though when I started to play it.

The first level is a straight fight between Arnold Schwarzenegger (T-101) and the T1000 and it's not exactly stirring stuff.

Second level and it's the chase-'em-up between the T1000 and John Connor on his motorbike. There are various obstacles in your way such as burnt out cars and, err water puddles. The difficulty level of the chase-'em-up does vary a lot. On one go you might last a full minute, others you might only live for five seconds.




## Robocop 2

**Hit Squad • £7.99**

Cor lumme, it's another film tie-in. This time old metal bonce is back. The first Robocop was excellent at the time and sold loads due to the fact that the arcade version and, of course, the film was extremely popular.

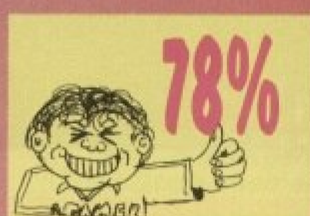
Robocop 2 the film was a bit of a disappointment to say the least and the same goes for the computer version. The first game was new and interesting, whereas the second was just seen as a standard platform game and a desperate cash-in before Robocop lost all of its popularity.

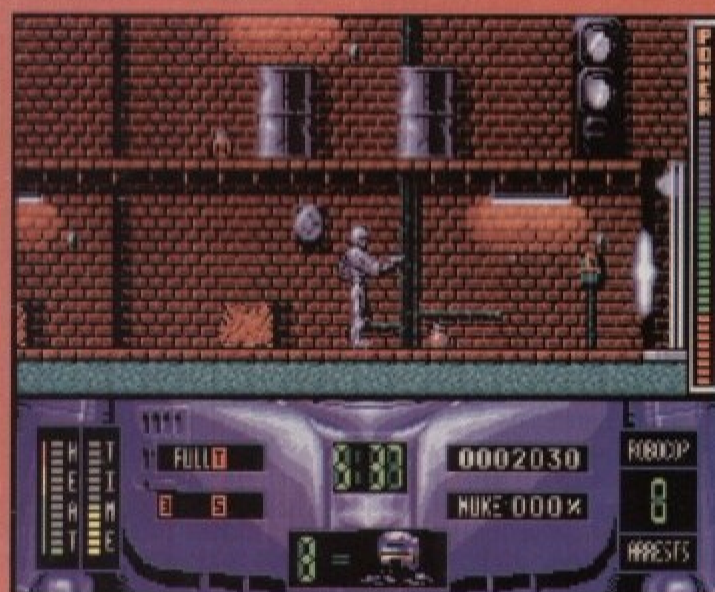
The idea behind the game is that Robocop has to save the city of Detroit from crumbling into ruin. The reason for this disaster is a lethal drug called Nuke.

The police are on strike and the citizens are easy targets for gangs of armed hoodlums and their leader Cain. The washing machine with legs has to destroy Cain and his lethal supply of Nuke.

Like Terminator 2 it's got good graphics, but is let down by poor playability. Robocop 2 is a very hard platformer and even the most experienced games player might have trouble in completing the later levels.

It will keep you entertained for a lot longer than Terminator 2, but doesn't quite make the grade







## RBI Baseball 2

**Hit Squad • £7.99**

What's going on? Is it that sequel kind of month or what? RBI Baseball 2 is just about the best baseball game that you can buy for your computer. Forget the opposition because there isn't any.

Why is it so good, I hear you ask? For starters it's actually quite easy to hit the ball. This always seems to be a major problem with baseball sims. They look nice and are well presented, but when it comes to the realism, there isn't any.

It's really annoying when you get what looks like an amazing game and it's let down by some small insignificant point like, ahem not being able to play it.

RBI's graphics and sound are brilliant, but they are nothing when compared to its sheer playability and addiction.

Every aspect is easy to understand and easy to play. It doesn't matter whether it's batting, pitching or fielding. One of the best touches is the electronic scoreboard which comes up with amusing little animations whenever something interesting happens, for example when a team is struck out or when a home run is scored.



Hi there reader! This is something of a bonus, isn't it? You've come to the end of Gamer with a tear in your eye as usual, and what do you find but the fabled back page we promised about three months ago.

Truth be told, we've been quite simply snowed under with games, and loathe to miss reviewing any and deprive you of the service you've come to expect, we thought it wise to wait a while.

But anyway, Back Stroke's arrived, and with it come the charts, which we've been neglecting for a while due to the shortage of space, and your letters.

Write to us on any subject – have a whinge or ask for help, and we'll sort you out if we can, or we'll turn your letter to the masses if we can't.

A Gamer badge (very rare and precious items indeed) goes to everyone who contributes, and, er... two Gamer badges go to those who send us any tips that we use.

# You thought we'd forgotten – but finally, here's...

# Back STROKE

## Amiga Maniac

Among the accusations and scaremongering over the computer/epilepsy syndrome comes a shocking tale of a suburban killer Amiga.

"Bloodhound" Ben Styles – always... er, alert, unearthed a veritable scandal in the Amiga world with the story of Bob, the killer A500 plus.

He discovered Bob in the home of Fred and Alice Clodbury, two unwitting Beast 3 fans who bought their Amiga for £80 at a car boot sale in Wigan. The couple were saved just before they met an untimely demise.

"When we first bought Bob, we had no trouble at all", recounts Alice. "We used to play on him well into the night.

"Then about two months ago we invited some friends around for a game.

"We left them to it for a few minutes and when we came back they were dead as doornails, with Bob standing over them holding a blood smeared machete – his disk drive clicking like mad.

"It took us a while to convince the police we had nothing to do with it – but Bob got them too!

"I was making some tea and Alice went to the loo," adds Fred. "When I came back Bob had wired a bobby up to the mains and was munching on the other one with some fava beans and one of our bottles of Chianti!"

Bob has since escaped custody and is thought to be living in a shed near Barnsley. So there you have it folks – computers DO kill. Beware.



**Beast 3: The clodbury's night time pleasures have gone forever**

## Ye Gods!

I was hoping that you could help me to kill the guardian on level four of Gods by the Bitmap brothers.

Mr S Hill, Middlesex

**Er, sorry S – Biff's the only one who's played Gods here, and he's too stupid to get that far. Anyone out there who can help big S? There's two Gamer badges in it for you if you can.**

## Big kid

I'm a 36-year-old father of three. My children get the better of me every time we play our games, and as my joystick performance leaves a lot to be desired, I wondered if you could supply me with a cheat for Xenon 2 or Beast 2 if there are any?

P A Lines, Cheshire

**It's not a very helpful Back Stroke this month Mr. Lines I'm afraid – there isn't a cheat for Xenon 2, and none of our useless staff know of any for Beast 2. Are we in the right jobs or what?**

**Hopefully some kindly person will let us know if there is one in time for next month, but in the meantime we suggest you suspend your kids pocket money and force them to clean your shoes – that should put a stop to any cockiness that arises.**

More letters next month – a couple of answers too if we can manage it. In the meantime, write to us on any subject:

Gamer Back Stroke, Amiga Computing
Adlington Park, Macclesfield SK10 4NP

We might doctor your letters a bit to make them fit in – but you're good people... you'll understand.

# THE CHARTS

ELSPA PENGUIN CHARTS

| This month | Title | | Publisher | Price |
|---|---|---|---|---|
| 1 | Street Fighter 2 | | US Gold | £27.99 |
| 2 | Alien Breed 92 | GAMER GOLD | Team 17 | £10.99 |
| 3 | Sensible Soccer 93 | GAMER GOLD | Renegade | £25.99 |
| 4 | Wing Commander | | Mindscape | £34.99 |
| 5 | Premier Manager | GAMER GOLD | Gremlin | £25.99 |
| 6 | Zool | GAMER GOLD | Gremlin | £25.99 |
| 7 | Indy Jones/Atlantis | | US Gold | £37.99 |
| 8 | F16 Combat Pilot | | Action 16 | £9.99 |
| 9 | James Pond | GAMER GOLD | GBH | £7.99 |
| 10 | Dizzy/Yolkfolk | | Code Masters | £7.99 |
| 11 | Trivial Pursuit | | Hit Squad | £7.99 |
| 12 | Harrier Assault | | Domark | £34.99 |
| 13 | Road Rash | | EA | £25.99 |
| 14 | Prince of Persia | GAMER GOLD | Hit Squad | £7.99 |
| 15 | Nick Faldo's Golf | | Grandslam | £25.99 |
| 16 | Campaign | | Empire | £34.99 |
| 17 | WWF Euro Rampage | | Ocean | £25.99 |
| 18 | Spellbound Dizzy | | Code Masters | £7.99 |
| 19 | 1st Division Manager | | Code masters | £7.99 |
| 20 | Indy Jones Adventure | | Kixx XL | £14.99 |

AMIGA insight

Nine pages of applications for the Amiga



Suppose a long and involved function has to be called several times by a program. It would make more sense if its result was stored in memory, and recalled every time it was needed, rather than having to be recomputed each time. If you have ever as much as used a pocket calculator with a memory, you know that this makes sense.

In memoisation we create a table, and each time a function is called with specific arguments, the result is stored at a corresponding position in the table (a memo).

Every time a value is needed for the function, we first check the table, and only proceed to calculate it if there is no memo for it. In certain cases this can result in enormous time savings!

Memoisation is used a lot in mathematical and algebraic software. However, this is not the place to explore arcane computing or scientific issues. We merely use simplified forms of these subjects as an interesting context or backdrop to show off what ARexx can do practically.

So if you are a beginner, there is no need to be confused. ARexx is there to simplify your computing chores, as I hope that this month's subject will amply demonstrate! It is certainly an application area tailor-made for ARexx, and it should give you ideas for many other uses.

Most of you already know that ARexx is a recursive language, ie its functions can call themselves. Recursion is a naturally elegant way to deal with many computing problems, and if you do any programming at all you will come across it, sooner or later.

We will illustrate the recursive programming style by using the Fibonacci series. This is a very well known series, since it appears in many natural forms, including the spirals of shells and the arrangement of sunflowers and daisies. Here are the first few numbers in the series:

1,1,2,3,5,8,13,21,34,55,89,144,233.... etc.

It is obvious that every element in this series is simply the sum of the previous two elements, and its definition is precisely that:

FiboNum(n) = FiboNum(n-1) + FiboNum(n-2)

That is, the nth number is the sum of the (n-1)th and (n-2)th numbers. This is exactly how we think of it, so it is reasonable to want to write a program for it in the same way (notice that the first and second Fibonacci numbers are defined to be 1).

Here is a very simplistic recursive ARexx program to find a Fibonacci number:

```
/* Fib.rexx */
SAY 'Which Fib. number do you want?'
SAY 'Enter Integer between 1 - 17:'
PULL n1  /* No checks are made here */
SAY 'The ' n1 'th Fib number is ' Fib(n1)
EXIT
Fib:
PROCEDURE
/* It MUST be declared a procedure if
  you want to use it recursively */
num = arg(1)
IF num=1 THEN RETURN 1
IF num=2 THEN RETURN 1
RETURN Fib(num-1) + Fib(num-2)
```

However, the above is an awful way to compute Fibonacci numbers. Even the relatively low numbers will speedily exhaust both your patience and your machine's memory. Look at the following figures, obtained from a standard A500:

| Fibonacci number | Time taken | Memory used |
|---|---|---|
| 15th (610) | 19.26 sec | 32,224 bytes |
| 16th (987) | 31.12 sec | 33,248 bytes |

This is obviously hopeless – you could probably work it out faster by hand. The trouble with this recursive definition is that (as the numbers get larger) it generates an enormous computational "tree", with huge amounts of effort duplication. Diagram 1 illustrates this problem graphically.

Those of you who are not familiar with recursion, but have used iteration (DO Loops) may be genuinely puzzled at this stage. The inefficiency of this method seems too ludicrous for words. After all, a simple iterative algorithm will yield the series much more easily. All you have to do is start from 1 (and 1) and keep adding successive numbers:

```
/* Fib_Iterate.rexx */
SAY 'Number? (over 2)'
PULL num
SAY num'th Fib = ' Fib(num)
EXIT

Fib:
SecondLast = 1 ; Last = 1
DO FOR arg(1)-2
 /* Get the Fibonacci no. */
 New = Last + SecondLast
 /* Move the two values up */
 SecondLast = Last
 Last = New
 END
RETURN New
```

All of the above is totally straightforward. No fuss, no mess, no bother. This algorithm takes virtually no memory, and computes the 15th Fibonacci number in 0.18 sec, the 16th in 0.2 sec, the 100th in 1.28 sec and even the 500th in only 7 sec.

Clearly the iterative method gives results that are acceptable, while the recursive method does not. Why even bother with it? Well, there are a number of reasons. First of all, the elegance of recursion is often close to the way we actually think about things; this makes it easier to formulate (describe) problems as algorithms.

Sometimes it can take quite a bit of work to translate an obviously recursive solution into an iterative one. Even in the trivial example above we still had to figure out the method of using the variables (Last, SecondLast and New) for ourselves.

There are cases where a recursive form might be extraordinarily difficult (not just inconvenient) to express iteratively. For example, look at the so-called Ackerman function A(x,y):

```
If x=0 Return (y+1) ; If y=0 Return A( x-1 , 1 ) ;
Else Return A( x-1 , A(x,y-1) )
```

With a good way to store and recall computed values we can get rid of the huge duplication effort – we will then be able to use recursive computation at speeds that are at least comparable to iterative methods.

ARexx offers an extremely efficient and simple mechanism for this: Tables using compound symbols. We looked at them in detail back in the Aug '92 issue.

For those of you who are not yet familiar with compound symbols, let us say that they are ARexx's equivalent of arrays, n-dimensional matrices and tables (but much more flexible). Unlike Basic, you do not have to reserve a space for them

## It's large!

If you want to play with large integers, don't forget that you can set ARexx with the instruction NUMERIC DIGITS 14. Up to 14 places are currently allowed, which, in our example would let you see the 68th Fibonacci number in its entirety (72,723,460,248,141 in case you wondered).

# Looping the loop

**Alex Gian looks at an interesting programming technique known as memoisation, which is especially useful where there is potentially a lot of redundant computation**



the beginning of your program, they are created as they are needed. They are also not limited to numeric values. Variables in compound names will reduce to their value; they can therefore be used inside a loop as counters. Here are some example compound symbols:

```
array.1    matrix.1.2   3d_Matrix.x.y.z
array.ref   ship.captain  ship.crew.2
```

There is just not enough space to deal with the subject in detail here, so I hope that the example is self illustrative. Otherwise refer either to the August issue or the ARexx documents (I understand that Commodore has finally included them with Workbench 3.0!).

On to the main part of our program. All we have to do is create a table with the same (or similar) name to our function, using compound symbols. I have called the function Fib() and the table FibTable. In our system Fib(num) will be stored in FibTable.num. The first two numbers are given, so they are stored in the table straight away.

After that, the program takes care of everything by itself. Notice that we have barely added two lines of code to our original recursive definition. Effortless or what?

```
/* Fib_memo.rexx */
FibTable. = 'Unknown'
FibTable.1 = 1
FibTable.2 = 1
SAY 'Enter Integer between 1   500:'
PULL n1  /* no checks */
SAY 'The ' n1 'th Fib number is ' Fib(n1)
EXIT


Fib:
PROCEDURE EXPOSE FibTable.
num = arg(1)

/* Check if value already known */
IF FibTable.num ~= 'Unknown' THEN RETURN FibTable.num

/* If the FibTable value is unknown, work it out
  store it in table, and return the value */
FibTable.num = Fib(num-1) + Fib(num-2)
RETURN FibTable.num
```

There are a few points to note. Firstly, setting the first part of the compound symbol "FibTable." (known as the stem) to "Unknown", sets ALL the uninitialised values of FibTable.xxxx until they are specifically changed.

When this value is tested in the table, we can immediately see whether it is already known or not. If it is not known, we calculate it and place it in the table before we Return. The next time it is called (tested) it will be known!

It is not even really necessary to assign "Unknown" to the FibTable. stem. We could have left that line out altogether if we used the following as the check in our Fib() procedure:

```
IF datatype(FibTable.num,Numeric) THEN RETURN
FibTable.num
```

The datatype() function checks to see if the value in the table is numeric. If it is, then it assumes that the value is known, and RETURNs it. However, this approach is a bit less obvious.

Also note that when the stem is EXPOSEd in the PROCEDURE, all occurrences, including ones that have not been created yet, are available to the procedure as "global" values (Shared or Static, if you are coming from Basic or C).

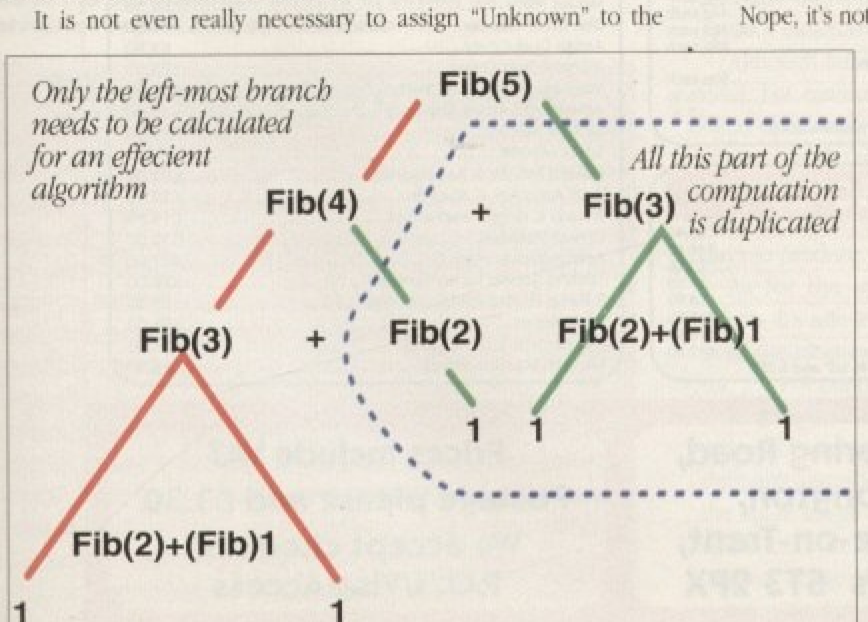
Note that the argument to Fib() is placed in a variable. This is because it is not legal to write FibTable.arg(1) in ARexx. Only variable names may be used in compound symbols, not function names. The results from this program are much more acceptable. The 15th number is found in 0.6 seconds, the 16th in 0.64. The 100th number is found in 4.3 seconds and even the 500th (> 1.39E+104) is found in 26 seconds.

This is still about a third of the speed of the iterative method, but there are many cases where ease is more important than speed. The technique is also quite demanding in terms of space, since all the values are kept in memory during computation. Nope, it's not cheap but it's worth it.

The usefulness of this method will not take long to sink in. For instance, we can easily memoise functions with more that one parameter, using a compound symbol of the form Table.a.b.c.d...etc. We could even maintain special information about our memo table such as the number of entries, or other special properties in variables like Table.num_entries, Table.sum_entries or Table.property.x. This is neater than just using any old variable.

Naturally, memo tables are not restricted to numeric information; functions that generate symbolic data can use them just as effectively. Finally, if you want your stored data to persist beyond the lifetime of your program, you can store it in the ARexx "clip" system. But we will have to look at that another time.

Of course, memoisation techniques can be implemented in just about any language, but in none as easily and simply as ARexx. Try it and see.




**Duplication of computing effort in recursive trees**

# I wanna be adored

**Paul Austin puts the latest in animation to the test as Adorage struts its artistic stuff**

Before the tour of Adorage begins I've got a little explaining to do. As the regulars may remember, this month's column promised an in-depth look at the special effects offered by RocKey – an all new Amiga chroma-keyer featured in last month's Almanac.

Alas due to ill health the aforementioned follow-up will have to be postponed until next month while the far less physically demanding Adorage steps in as an extremely worthy replacement.

As you're all well aware, the Amiga isn't exactly lacking when it comes to animation software, so what will yet another have to offer, especially if the package doesn't support 24-bit images, Ham8 or even old style 4,096 colour HAMs?

Doesn't sound very promising, does it? However, a direct comparison between Adorage and existing animation software is in truth a little deceptive.

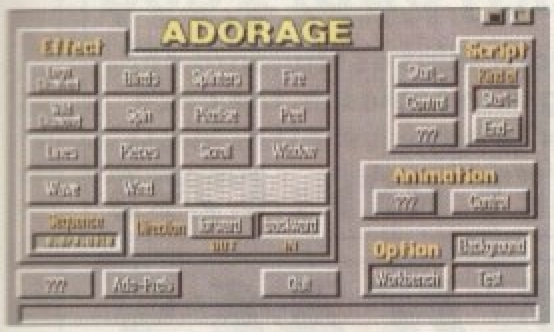
A more accurate appraisal would be to label the package as either an image presentation system or perhaps a video effects platform aimed directly at breathing life into existing stills.

Unlike the majority of Amiga animators, Adorage doesn't concern itself with the generation of original images, but rather their manipulation and combination within an anim.

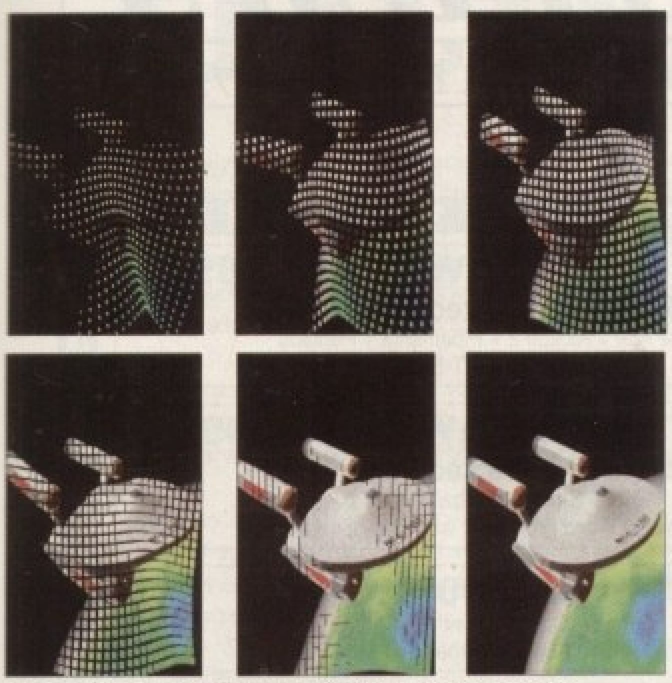
For example, if you have a number of static images all sharing a common resolution they can be combined sequentially and transformed within Adorage from a less than inspired collection of statics into a swirling, ever-changing presentation which pauses momentarily on the original image prior to introducing the next.

In some ways the animations generated by the software are very reminiscent of the wipes and fades offered by packages such as Scala, Medialink, ShowMaker and the numerous presentation programs that come as part of the more multimedia oriented 24-bit systems.

The big difference offered by Adorage is that just over 700 possible effect combinations from an initial selection which include Logo diamonds, blinds, splinters, fire, wild diamonds, spins, pixelise, peels, lines, pieces, scrolls, windows, waves and wind.




*Och no Captain she's breakin' up... (please read with heavy scottish accent)*



*One of the best Adorage effects in action as the Enterprise waves its way on screen*



Each effect in turn then offers a variety of effect styles which allow the user to specify the size, complexity and style images to be generated. Although several of the listed effects may sound familiar such as blinds, scroll and spin, it's worth bearing in mind that although not unusual as special effects, Adorage is unique in that it allows you to define exactly how you want the effect to progress.

Whether it is to be accompanied by a background image and perhaps more importantly how the finished results are to be saved – either an SSA or Anim5 format.

Although familiar even these simple effects are amazingly powerful. For example, imagine trying to build a simple four-column blind effect animation form an existing static via DPaint. Although achievable, the time and planning needed to match the quality of an identical Adorage effect would takes hours if not days to produce.

As for the more complex Adorage effects, it's safe to say they're well beyond even the most experienced DPaint animator, a fine example being the helix effect.

In this particular example, the image is either broken or recombined from a definable number of facets which swirl the entire image or brush into the familiar spiral of a helix before reforming the original image or dispersing it altogether – not only impressive but impossible to duplicate with any other Amiga animation system.

## The shortcomings

OK, you've had the good news, now it's time for a little bad. Firstly like almost every package aimed towards animation Adorage has a veracious appetite for RAM and in turn storage space.

Although neither excessive RAM or a hard disk is strictly essential, practical application really demands both of the above to produce a usable end product.

Secondly, as mentioned earlier, the package is fairly limited as far as available resolutions and screen colours are concerned, with only hi-res 16 colour or low-res 32 colours available – both of which require interlace as a prerequisite.

Alas, none of the new AGA modes are supported although a new version has been promised for the hugely expanded palette of the A1200 and 4000.

Another curiosity of Adorage is its fondness of the 1200 and its total hatred of the 4000 – a machine on which the package won't even load, never mind animate.

## Controlling the action

With a package aimed squarely at the busy semi-professional, ease of use, compatibility and flexibility have to be high priorities. To this end, Adorage does well with options to save its creations both as IFFs and SSAs – alias Super-Smooth-Animation – a format which animates much faster than standard Anim5 but in turn sacrifices compatibility in the process.

User preferences can be defined and saved plus anim sequences can be saved in a script form as a start and end effect which can then be saved into a library of favourite effects and applied to new images as required.

*Adorage is available from:*
*HB Marketing, Tel: 0753 551888*
*Price: £79.99*

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# Intuitive info

**Margaret Stanger on the properties and characteristics of the Amiga's most patient windows**

An Intuition window is like a program waiting for an event to happen, so that it can take the necessary action. Two of the programs on the CoverDisk demonstrate features of Intuition windows to new assembler and C programmers. The third program is a public domain utility for documenting source code.

When an event occurs in an active Intuition window, an informational message is generated. Blocks of data (or data structures) called message ports can be used to communicate with these messages.

An Intuition window has two separate message ports, for window events and for IDCMP events. Each Window flag represents an event that could send a message to the window's WindowPort.

For example, if the window depth flag is set, the window is generated with the gadget in the upper right-hand corner. When the mouse clicks on the gadget, the window is rearranged relative to other on-screen windows, no intervention by the program is necessary.

Each IDCMP flag represents an event that a program could be informed about by a message in the window's UserPort. The main feature of an Intuition program is usually a polling loop which waits for an event to occur and interprets the message.

Instead the demonstration program takes a short-cut, and uses the Wait command to await a single WINDOWCLOSE event.

assembler, for a NewWindow structure with address in register A0, the address of the screen pointer is nw_Screen(A0).

The CoverDisk contains the program source code listing in C (win.c) and the object code (win). The source code includes intuition/intuition.h for the Intuition window and screen structures and definitions used in the program source, and exec/types.h for datatypes used by the intuition.h header file.

When the object program (win) is run, the program opens the Intuition library, and opens a low resolution custom screen imaginatively titled custom screen. A window called the small window will open – it can be moved using the drag bars at the top, or be resized using the gadget at the lower right-hand corner.

It could be rearranged relative to any other of the screen's windows (if there were any) with the depth gadget at the



The main compiler (or assembler) header directory contains a subdirectory of header files for each library, containing useful macros and definitions for some of the library functions. Relevant header files can be included in the source code.

These header files also contain definitions of structures (or blocks of information) used by the system and by the library routines.

Each structure has a unique name. Each separate piece of information, or structure member, also has a unique name. The structure definition contains the names and datatypes of all its members.

Header files exec/types.i and exec/types.h contain information on the size of each datatype. This enables the compiler to calculate the offset of each structure member from the start of the block of information.

For example, in C source code, the screen pointer structure member of a NewWindow structure called TheNewWindow is represented in the source code by TheNewWindow.Screen. In

top right-hand corner.

The complete program source code listing (screensandwindows.a) is available on the CoverDisk in assembler. Instead of including all the long intuition/intuition.i header files, I have isolated the relevant structure definitions, and put them at the end of the code section of the source code.

Header files been included with datatypes and definitions used by these Intuition structures. When the object program (screensandwindows) is run, the program opens the Intuition library, opens a low resolution custom screen, and a small window that can be resized, moved, depth arranged and finally closed. The program closes the screen and exits.

When a program is being written, priority is given to producing a working version before the deadline. Ideally each function in the source code should have a meaningful name, and a description of the task it is trying to accomplish.

Each variable should be accompanied by a helpful little comment. A few words at the start of the source code can give a clue to the purpose of the program.

Comments explaining the "clever bits" of the code are a nice touch. All this documentation can be a real godsend later on, when chunks of the source code are to be recycled in another program.

By the time the author gets round to it, too much time has elapsed, and some of the subtleties of the code have been forgotten.

A newly discovered public domain utility, Docca, can remedy the situation. It can tidy up source code loop indentation, and add comments to any standard data structures. Global variables are given comments, and cross references to the functions that use them.

A brief summary of each function is added, and a short description of the program's purpose. The utility will even attempt to document some of the more obscure lines of code, but success cannot be guaranteed.

This utility has been included on the CoverDisk – simply type in docca and the filename of the offending source code, and all your documentation problems will be solved.

## Language command

**Each Intuition window has a background Intuition screen, which is open but may not be visible. The command OpenScreen() opens a new screen and returns the address of the Screen data structure containing all the information relating to it.**

**The input to the command is a pointer to a NewScreen structure, with information about how the screen should look. The screen in the demo program has its size, number of colours, title, type and pens defined by the program, but otherwise uses default values.**

**The command CloseScreen() is used to release screen memory used by the program and return to the previous display. The command OpenWindow() opens a new window, and returns the address of the Window data structure containing all its information.**

# Clarity close-up






**After last month's 16-bit sampling spectacular, Paul Austin continues his quest for the perfect sound with a detailed look at Clarity within a Midi environment**

Although last month's Clarity feature did much to explain the basics of the Amiga's latest adventure into 16-bit sampling, this month's Almanac plans to look a little deeper at the more subtle aspects of the system.

Obviously a primary concern to the serious musician is Clarity's compatibility with Midi hardware. As mentioned in last month's issue, Midi is surprisingly well catered for.

However the existing options do have their problems. As you may remember, when Clarity is combined with a Midi keyboard, an entire sample map can be applied to the keyboard with up to four individual samples playing simultaneously, providing the host machine can match the performance of a A1200 or above.

In practice this works perfectly when the connection between Clarity and the master keyboard is a direct one. However when the combination of Clarity and the keyboard is made via a sequencer problems can arise.

As you may recall, Clarity's Midi vocabulary is a very simple one with just a simple Midi On/Midi Off being all that's required to trigger sample playback.

As a result and in an ideal world, triggering the sampler via a sequencer should be a simple matter of connecting up a Midi cable from the sequencer to the sampler.

Alas, in practice things are a little more complex as Clarity can, and often is, easily confused by a complex flow of Midi data. The end result can be that suddenly you find yourself with one sample during playback as opposed to the four you had planned for.

Fortunately there are a few methods of combating the problem. First and foremost check your chosen protocol and bit transfer settings and try experimenting with a few variations – you can always reload your defaults so any mistakes can be easily rectified.

Secondly when connecting up try to ensure that Clarity receives as clean a Midi signal as possible. There are two methods of achieving this. First make sure the connecting lead isn't excessively lengthy, make sure it's well insulated, and secondly, try connecting a Midi Out direct to the sampler rather than daisy-chaining a signal through numerous Midi Thru ports. This is often the cause of degraded signals - and in the case of Clarity they can be fatal.

If at all possible, use a direct line out from your interface or junction box, thereby insuring a crystal clean signal for the sampler. In addition try making a few subtle adjustments to the fast Amiga settings in the Options menu.

Fortunately the authors of the manual have been kind enough to offer some presets for an A1200. Use these as a guide while adjusting to suit your system.

Finally, no matter how fast your machine is, don't be tempted to run the Clarity and sequencing software simultaneously on the same machine. If possible, employ a second Amiga or more likely your keyboard's internal sequencer.

On a final note of gloom we come to Clarity's Midi dump function which allows samples created with Clarity to be dumped to either a sampling keyboard or module. In early versions the aforementioned dump function didn't work with certain setups.

Fortunately, thanks to the efforts of Dan Lennard, the author of the Clarity, the compatibility problem could be resolved as the finishing touches have just been added to a new version which will hopefully cure the dumping problem (what an unfortunate expression!).

If you've suffered such problems contact Microdeal – or a doctor – for further information on obtaining an upgrade.

## What's in the pipeline

Although so far I've mainly listed problems – none of which are incurable – there's a fair amount of good news in the form of a dedicated four-track drum sequencer plus the implementation of Midi timecode.

Although the phrase "drum sequencer" might not throw you into raptures, don't let the phraseology put you off. In truth a drum sequencer as far as Clarity is concerned can be put to a lot more use than simple percussion.

In fact, if the new software employs some of the mapping techniques used within the Midi sample player – where samples can be played at various pitches – this new four-track offering could be the Amiga's first 16-bit equivalent to MED. The aforementioned sequencer is likely to be the first upgrade on offer.

It pains me to say it, but the software emanates from the ST, which goes to prove that even has-beens have their uses.

Thanks to the fact that the ST and Amiga share the 68000 series of CPUs, conversion isn't as big a problem as you might imagine. As a result, a drum sequencer already available on an ST equivalent of Clarity will soon be on offer. Keep an eye on the Updates and Insight page for details.

As for the planned Midi timecode option, this could well be a part of the new drum sequencing package. Alas, it's unlikely that the new upgrade will come as a freebie, as is almost certainly the case with the promised direct-to-disk option.

As more details and release dates appear, rest assured that *AC* will be the first to let you know.

Although most of the above appears rather negative it's worth stressing that Clarity is far and away the best thing to happen in on the Amiga music scene in a long time. If you're looking for a cheap introduction into the world of 16-bit sound it's ideal and sure to improve with keeping.

For more details on Clarity contact
Microdeal
Tel: 0726 68020
Price: £149.95

# Message in a bottleneck

**Avoiding muddled files is a must in the comms world. Justin Robertson looks at the various protocols available which help you to do just that**



Telephone lines were not originally designed to carry precise digital information, where every bit and byte is essential. Crackly lines are the bane of the comms world, so reliable file transfer is as tricky as it is essential.

Nowadays modems exist which can correct errors by "talking" interactively with each other, but long before such technical wizardry had evolved, the now legendary Xmodem protocol (system) managed to solved the problem – with compromises.

The basic idea is very simple. Instead of sending a file as one long, unchecked string of data, Xmodem splits the data to be sent into 128-byte chunks. At the end of each chunk the computer sends a "checksum" – a number based upon the values of the previous chunk of data.

If the checksum is the same at both terminals, the data must have been sent correctly, and the computer continues with the next block. If there is a mistake, it simply sends the offending block again. Obviously the worse the line, the longer such a system will take.

Indeed, this is where the compromise lies with Xmodem, and why – although most comms packages still support it – it has been superseded by more modern protocols. The problem is that, because it sends data in such small blocks individually verifying each one, even with a clear line it can take a while to transfer a file of any length.

This is compounded by the fact that, as baud rates have increased, the gap between Xmodem and other protocols has grown even wider – it takes the same time to check whether the last 128 bytes arrived correctly whatever baud rate you're running at!

Along with other disadvantages, such as problematic checksum technicalities and an inability to append extra information such as the filename onto Xmodem files, Xmodem has become somewhat dated, and even with refinements, it was dealt a death-blow by the arrival of Ymodem.

This protocol adds the ability to send data in 1,024 byte block as well as 128, avoids time-consuming extra data appended to the end of blocks, and provides the facility to tag a file with an individual date, time and filename.

You can choose, too, whether the computer still acknowledges each individual block or – using a hybrid called Ymodem-G – speeds through the whole file at once.

This would, at first glance, seem to be putting us back to square one – if there's no error correction facility and the modem is sending a file in one go, surely the system is chronically prone to errors as soon as the line so much as crackles a little?

Well, yes and no. Firstly, thanks to hardware advances allowing modems to utilise built-in MNP or V42 error correction, transfer errors can be avoided a lot more easily than a few years ago.

Secondly, YModem-G utilises error detection rather than error correction. This is an all-or-nothing safety net to catch corrupt files if MNP or V42 have failed.

Basically, it aborts a download if there has been any data corruption, rather than attempting to re-load an offending block. Obviously this is as real pain if you're half way through downloading a huge graphics file, but in practice it happens very rarely. Most recently, however, Zmodem has appeared on the scene. More evolution than revolution, Zmodem is currently the fastest and most modern protocol available.

As well as being fully backwardly compatible with the earlier systems, it uses a system called CRC (Cyclic Redundancy Checker) to ensure that data is arriving successfully at the remote machine, and should some blocks be sent incorrectly, it can go back and send them again later.

Thus it keeps the fine-toothed comb of Xmodem, but – nodding towards better hardware – utilises the "data stream" characteristics of Ymodem.

The full utilisation of more powerful computers, better software, faster baud rates and the general rise of spohistication in the developing comms world all mean that Zmodem is highly user-friendly as well as reliable and fast.

As well as being fully capable of adding filenames, time, date, file sizes and other important information to files, Zmodem can transfer groups of files in one download and can react intelligently to what the other computer is doing, setting itself to receive or send data accordingly.

For argument's sake, should the line go completely dead in the middle of a particularly long-winded download, it is possible for you to phone back the other computer and start downloading again from where you left off.

With Zmodem, comms protocols have reached the point where they are fast and reliable enough to deal with most line noise and other obstacles put in their way, while keeping the user fully informed about what's going on.

It's a far cry from the arduously tested 128-byte blocks of all those years ago!

## Getting the fax

Protocols and applications have developed together – more demanding uses for comms have precipitated better technology, and vice versa.

One of the latest developments is the fax modem. Along with the correct software, such as GPfax, compatible with the Supra range of modems, it is now possible to use your Amiga as a fully-fledged fax terminal as well as a "normal" comms terminal, all in one.

Obviously you gain by never actually needing a hard copy of your documents. You can put together a DTP layout, Ascii file or graphic and generate and send a fax without your printer even thinking about whirring.

As faxes come in, you can read them on-screen, only printing them if you need a hard copy. Patently this would all have been impossible with early version of Xmodem!

# AMOS

# Read it!

## Obtaining information from your mouse, joystick or keyboard doesn't have to be tricky, as Phil South finds out

Unless you come from the 21st Century, you interact with Amos programs using the keyboard, mouse and joystick, and although the keyboard is easy (if you know Basic), getting the computer to understand what you want using the mouse and keyboard is harder to master.

Amos is really good at reading the hardware, and this is because it's been thought through properly.

For example, for reading if a mouse button has just been pressed, you just use either the MOUSE KEY or MOUSE CLICK commands. To set or read the position of the mouse pointer on screen you use the X MOUSE and Y MOUSE instructions (much simpler than ordinary Basic).

And finally you can limit the mouse to certain areas of the screen with the LIMIT MOUSE command. Obviously once you have the mouse being read from the Amos program, you can just as easily pass the info from the mouse to a sprite and relate its moves to those of the mouse. Like this sort of thing:

```
Screen Open 0,320,256,32,Lowres
Flash Off : Hide : Cls 0
Load "anysprite.abk"
Get Sprite Palette
Double Buffer
Do
   X1=X Mouse : Y1=Y Mouse
   Bob 1,X1,Y1,1
Loop
```

The X MOUSE and Y MOUSE values are astray by about 150 in the x dimension and about 50 in the y direction due to a little difference of opinion between hardware and screen co-ordinates. It's a simple matter to fix this using X SCREEN and Y SCREEN or X HARD and Y HARD, and this is how it's done in Amos:

```
Curs Off : Cls 0
Ink 7
Bar 0,0 To 319,150
Ink 2
Box 0,0 To 319,150
Box 100,100 To 200,50
Pen 0 : Paper 7
Locate 0,1
Centre "LEFT button = mouse limit"
Locate 0,3
Centre "RIGHT button = no limits"
Do
   If Mouse Key=1
      Limit Mouse X Hard(0,100),Y Hard(0,100) To X Hard(0,200),Y
Hard(0,50)
      X Mouse=X Hard(0,150) : Y Mouse=Y Hard(0,70)
   End If
   If Mouse Key=2 Then Limit Mouse
Loop
```

The mouse can't move outside the confines of an invisible box on the screen, which is good for the kind of game where an attack wave is coming onto the screen from the right-hand side and you might smack into a few bobs as they appear.

If you can't reach that side of the screen your player will be safe, until they start shooting at least.

So the thing to bear in mind with object control is the difference between hardware co-ordinates and screen co-ordinates. The X MOUSE and Y MOUSE commands return hardware co-ordinates so you have to convert them to screen co-ordinates for the position to be right – the same with LIMIT MOUSE.

In order for the co-ords from X and Y MOUSE to be correct you have to convert them using X and Y SCREEN respectively.

Many games require more controls than the simple up, down, left, right and fire – flight simulators are a good example of this.

Flight sims usually have a number of controls. Obviously a joystick is a good start, but for things like setting your flaps, throttling the engine, launching rockets and so on, a few more control keys are required. This is where the keyboard comes in.

The simplest method for controlling things using the keyboard is to examine individual keys and check if they're equivalent to certain Ascii characters.

Ascii is a standard code for computers where every key on the keyboard has a number, and although these numbers are usually only used internally for the computer to identify certain characters, the codes do have uses in computer programs.

Commonly the computer language you use has a sort of translation of the codes built in, so you can say:

```
If B="N" Then _DOTHEBIZ
```

kind of thing. This means that if a key you have pressed is in fact the capital "N" key, the Proc called _DOTHEBIZ is actioned. To grab the key in the first place you have a few options the simplest of which is the INKEY$ statement:

```
Do
   Z$=Inkey$ : If Z$<>"" Then Print Z$
Loop
```



INKEY$ waits in the background until a key is pressed, and then when it is the value of that key is stored in the variable you assign it to. Testing that variable allows you to check which key it was that was pressed.

To check the Ascii codes of keys you can test them with the ASC and CHR$() functions. ASC generates the Ascii code of a character and CHR$() converts that code into a character on the screen.

A more sophisticated function is the SCANCODE keyword, which allows you to check for keys which don't actually print on the screen, like Help, Del or the function keys F1 to F10. This means that all the keys on the keyboard can be trapped and used as control keys for your program. This short program gives you the basic idea:

```
Screen Open 0,640,256,16,Hires
Hide : Paper 0 : Cls 0
Do
   While _KEY$=""
      _KEY$=Inkey$
   Wend
   If Asc(_KEY$)=0 Then Print "This is a Special Key!"
   Print "The Scancode for this key is";Scancode
   _KEY$=""
Loop
```

The function keys can also be accessed with this command, and this can be handy for utility programs, and even creating keyboard short-cuts from menus, should you want to do such a thing.

If you want to know more about Amos, then why not get Phil's book *Mastering Amiga Amos* from your local bookstore, or direct from Bruce Smith Books on 0923 894355.

### Write stuff

If you have an Amos question, then please write to Phil South, Amos Column, Amiga Computing, Europa House, Adlington Park, Macclesfield SK10 4NP.

# Behind the lines

**Understanding what goes on when you print a graphic can help you to choose the correct parameters for pristine printing. Ben Pointer grabs his magnifying glass...**

The argument about which is the top Amiga DTP program is never ending. The only certainty is that the battle is between Soft-Logik's PageStream and Gold Disk's Professional Page. Probably.

Both have strengths, both have weaknesses, but something PageStream can do that Professional Page cannot is adjust the "screen frequency" of bitmap graphics, and output them at this frequency to dot matrix printers.

Normally this screen frequency feature is restricted to PostScript output, and even then a single frequency is specified for the whole document.

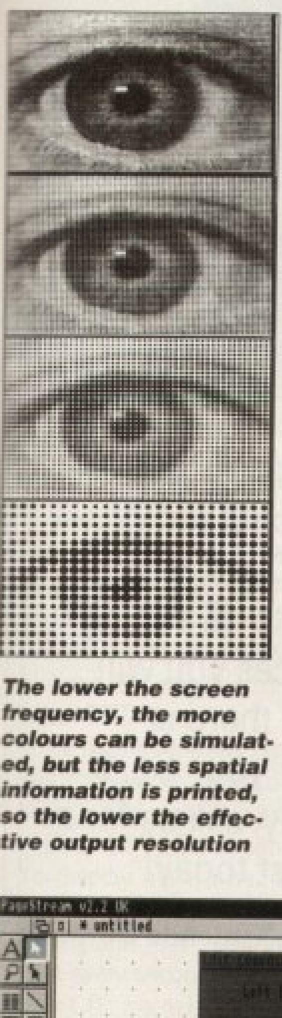
PageStream lets you adjust the screen frequency of each bitmap graphic individually, enabling you to print each bitmap at its optimum frequency.

The term screen frequency is often misunderstood. It has nothing whatsoever to do with the screen you are looking at – the display, I mean, the TV or monitor.

It's got nothing to do with that. And while it affects the resolution of the printed output, screen frequency is not the same thing as output resolution.

The term is a hangover from traditional publishing where graphics are photographed through a fine mesh or screen in order to turn the continuous tones of the graphic into patterns of black dots.

The frequency part of the term describes how fine is the mesh, and is specified as a "lines per inch" value. Do not confuse "lines per inch" (lpi) with "dots per inch" (dpi) – they are not the same thing. After the graphic has been screened (photographed through the screen), you are left with something called a halftone, and it is this halftone that is published, not the original graphic.



*The lower the screen frequency, the more colours can be simulated, but the less spatial information is printed, so the lower the effective output resolution*

Look closely at any black-and-white photo in any newspaper and you'll see an example of a halftone.

Screen frequency in desktop publishing is not quite the same thing, but it has the same effect – it enables you to simulate continuous tones or shades (colours and solid greys) as patterns of different sized black dots with white gaps between, or white dots if you like, although black is the only colour that actually get printed, of course.

The finer the screen, the higher the apparent output resolution, but the fewer shades can be simulated because the "dither matrix" – the number of pixels available in which the patterns can be created – is reduced in size. It may sound quite technical but it's really dead simple, and is probably best illustrated with an example.



Let's say we have 300 dpi printer and we are printing a graphic at a screen frequency of 100 lpi. The 100 lpi means that in every inch across and down the printed graphic there will be 100 opportunities to create a pattern of black and white dots that simulates one colour or shade of grey.

Now, as our printer is a 300 dpi device, at this screen frequency each shade can be simulated in a dither matrix that is three dots wide by three dots high – output resolution (dpi) divided by screen frequency (lpi) equals the number of dots wide and high is the dither matrix, in this case 300/100=3. If the matrix is three dots wide and three high, then there are 3x3=9 dots in all in the matrix. If one of those nine dots is black and the rest are left white, we have simulated a light shade; if two are black and the rest white we have simulated a slightly darker shade; and so on up to all the dots being black, in which case we have simulated black or a very dark shade. Nine dots, so nine shades can be simulated.

If we reduce the screen frequency to 60 lpi, each dither matrix can be 5x5 dots (300/60=5), so 25 shades are possible. Get the idea? But this is only true if you are printing at 300 dpi (DeskJet, LaserJet...). If you are printing at 360 dpi (24-pin dot-matrix, bubble jet), then each dither matrix at 60 lpi is 6x6 dots (360/60=6), so 36 shades can be simulated.

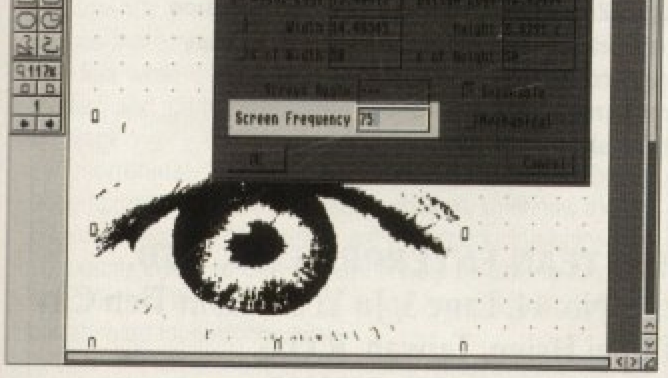
If you are still confused or worried by the maths, go back and read the explanation again, slowly this time – there's only one division and one multiplication.

But the price you pay for more simulated shades is less information per unit area of paper. Or in other words, fewer dots per inch. Or in yet other words, using a screen to print more shades has the effect of reducing the apparent output resolution.

A good compromise for 300/360 dpi printers is a 60 lpi screen, which produces 25/36 shades. But if the graphic you are printing contains only 16 colours, then 75 or 90 lpi will simulate 16 shades (on 300 and 360 dpi printers respectively) and give you a higher output resolution.

If the graphic contains only 8 colours, then 100 or 120 lpi will simulate all of them and give you a higher still output resolution.

If it is a 4-colour graphic, then 150 or 180 lpi will handle that. But keep in mind that the higher the lines per inch figure, the smaller the dither matrix, so the more difficult it will be to simulate any particular shade.




*The Screen Frequency gadget is found in the Edit Coordinates requester. Each bitmap graphic may have its own screen frequency*

## Perfect posters

Printing a number of shades at the expense of some of your output resolution can work to your advantage when enlarging a picture.

Enlarging means that there are more dots to work with, which offsets the loss in resolution caused by a larger dither matrix size.

This, added to the benefits to be had by being able to reproduce more shades, means that enlarged graphics printed with 30lpi (ish) screens will look quite good when viewed from a few feet. Perfect for posters, for example.

# Package deals

**Two programs dominate the multimedia creation scene. Which will be the best for you? Julius Alexander offers some advice**

Last month we looked at some of the tools that can be used to create multimedia and CD-ROM applications. This month, I'm continuing this with a more in depth look at two of the easier to use development packages that are now available, AmigaVision and Scala.

When Commodore originally released the A3000, their then top of the range Amiga, they gave away AmigaVision as an easy to use multimedia authoring tool.

It certainly is easy to use, working by placing icons on a grid through which the program flows. Each icon represents an individual action such as playing sound and speech, showing pictures/animations and controlling external devices such as laser disks.

There is also the facility to control the flow of the program through the branches, ie rather than just following a series of steps your program can have two different routes and being able to chose which one to take depending on the state of a variable.

Given these capabilities, AmigaVision can be used to create some impressive multimedia applications with support for a wide range of hardware peripheral input and replay most types of Amiga data. Unfortunately it has two serious drawbacks.

Firstly, there is no way in which you can create a program that doesn't need AmigaVision to be used, otherwise known as a run-time module.

Secondly it swallows memory like Vampire brain surgeon. One megabyte is needed simply to load the program! Still if you can live with these shortfalls, AmigaVision is recommended for its ease of use and peripheral control.

A rival to AmigaVision for ease of use and power is Scala. Originally available in one version, Scala is now in two forms – The original Scala, called Scala 500, and its big brother, Scala MM (for multimedia).



Due to limitations of space, I'll be looking at Scala MM in a future issue and confine my scribblings just to Scala for this month.

The program itself set the benchmarks for ease of use when it first appeared, allowing presentations to be created ridiculously easily. Originally developed for creating presentations, Scala can also be used for simple applications.

It works by creating scripts. Each script is a list of pages and the associations between these pages. Each page consists of an IFF backdrop onto which you place text, and brushes.

Text can be in any standard Amiga bitmap font each of which can have numerous different text attributes applied (bold, drop shadow and so on) and there are a number of very high quality fonts supplied.

Helping to break the monotony of static text, there are roughly 50 text effects that can be used to scroll, faded and dropped into place.

Switching between different pages is facilitated by buttons, clicking on which will take the user to a different page. Each page can be simply displayed on the screen or introduced through a transition.

These consist of fades, scrolls and wipes and are fast, even on the lower end Amigas.

Its major failing is that it lacks proper CD-ROM support, with no CD audio or CDXL playing capabilities. If however, your application consists of just screens, it's worth a look.

Next month I'll be looking at some recent developments in the field of Amiga multimedia and ask where is it all going?

## Full-screen FMV for CDTV?

As I finish this column word reaches me of some interesting developments on the FMV front. Word is probably already creeping through concerning a new CDTV.

What form this will take is unknown, but associates tell me that it will include full screen FMV. How, you may ask? The answer comes from a new compression format known as MPEG.

This format reduces the space required to store moving pictures. But why should a strangely named what-d'ya-call-it affect CDTV and FMV?

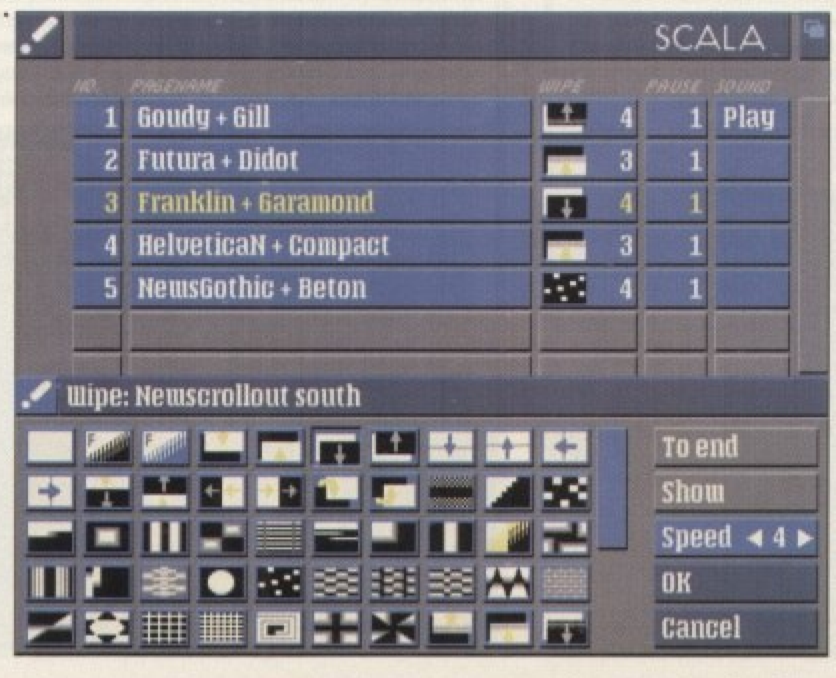
To explain, moving pictures are made up of a number of still frames displayed one after another, each changing slightly. The result is a moving picture.

Each CDTV full screen occupies a fixed amount of space. To display even a half decent moving picture the CDTV would need to display 16 of these a second (the more the better) and thus need to transfer 16 times this amount of data every second from the CD disc – and we all know how slow CDs are at loading.

Currently it simply doesn't have the speed. However, reduce the amount of data to be transferred (ie compress the data while it loads and then uncompress it once it has loaded) and the transfer speed suddenly becomes a smaller problem.

Unfortunately the technology hasn't been available to uncompress these images quickly enough. Until now that is. Several American companies are now producing chips that do exactly this, and Commodore should be able to incorporate this into the next CDTVs – and hopefully, produce an update card for existing units!

This isn't expected to happen for a while, but sources tell me we should expect to see something appearing mid-summer 93! As they say, watch this space.




*Is Scala the multimedia program for you?*

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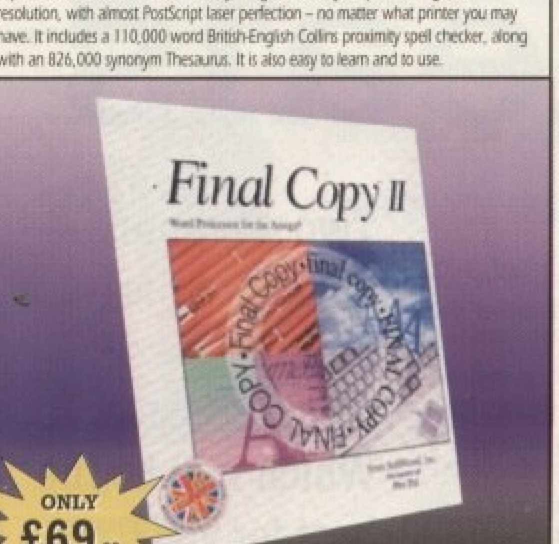
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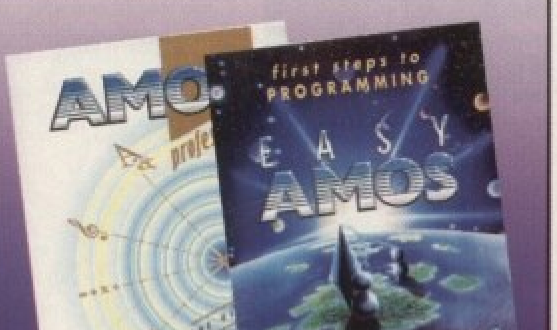
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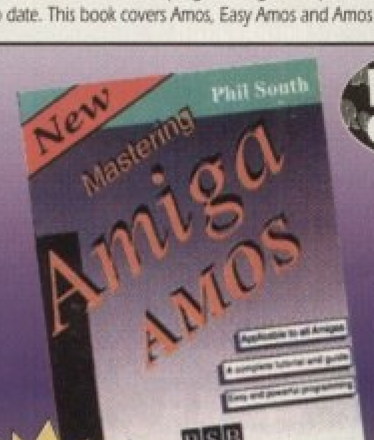

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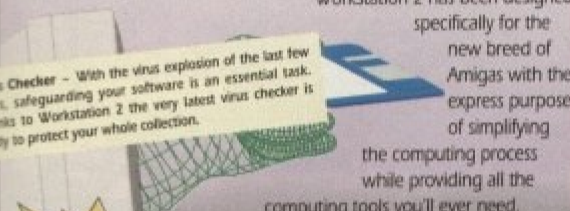
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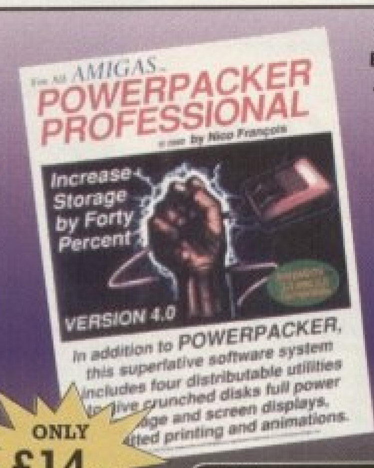
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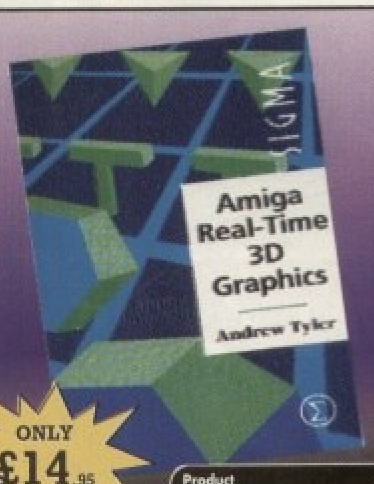
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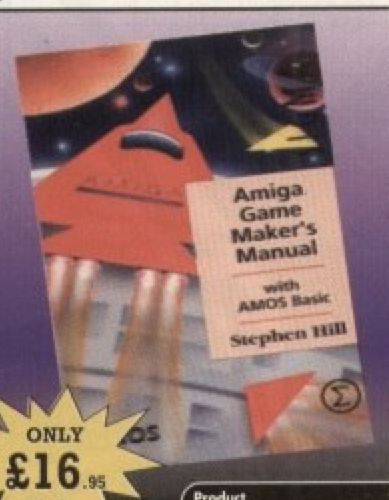



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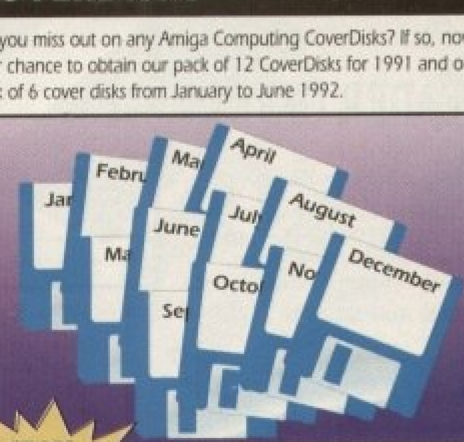



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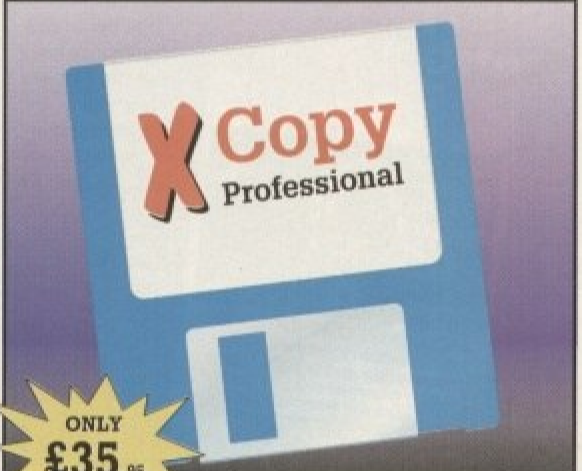
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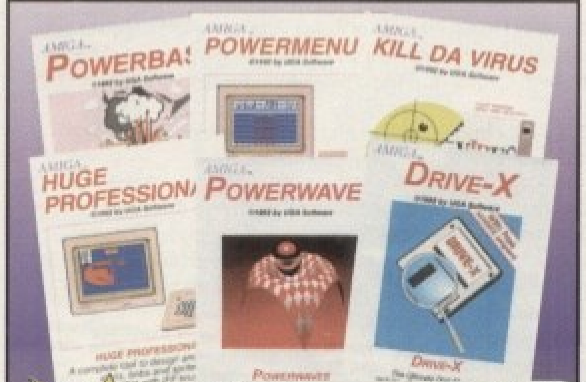



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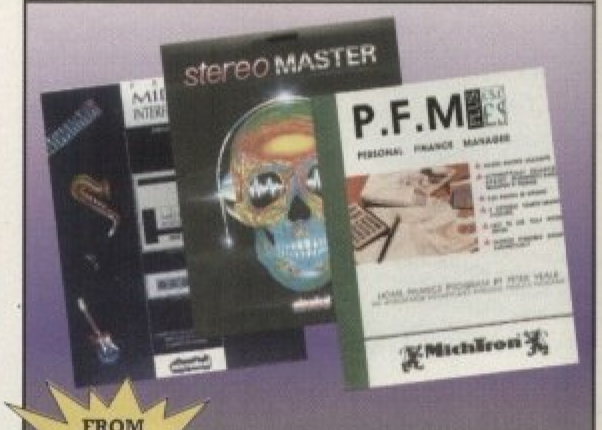



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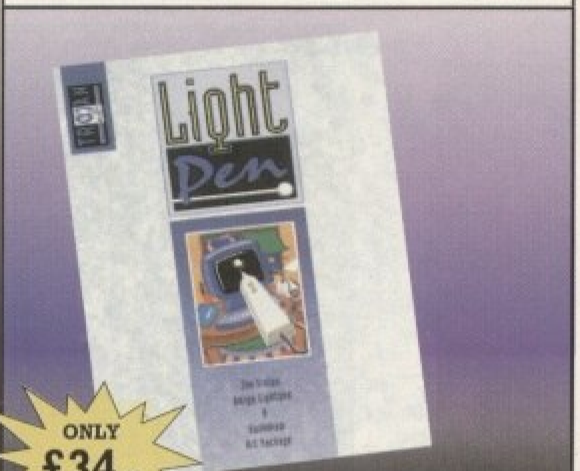



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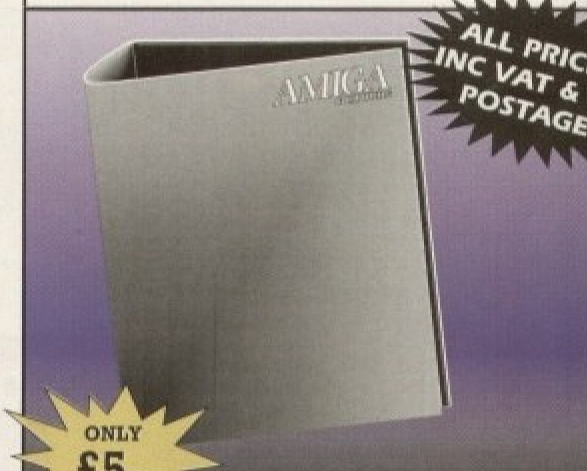

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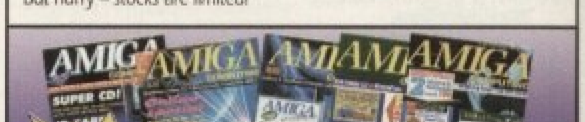



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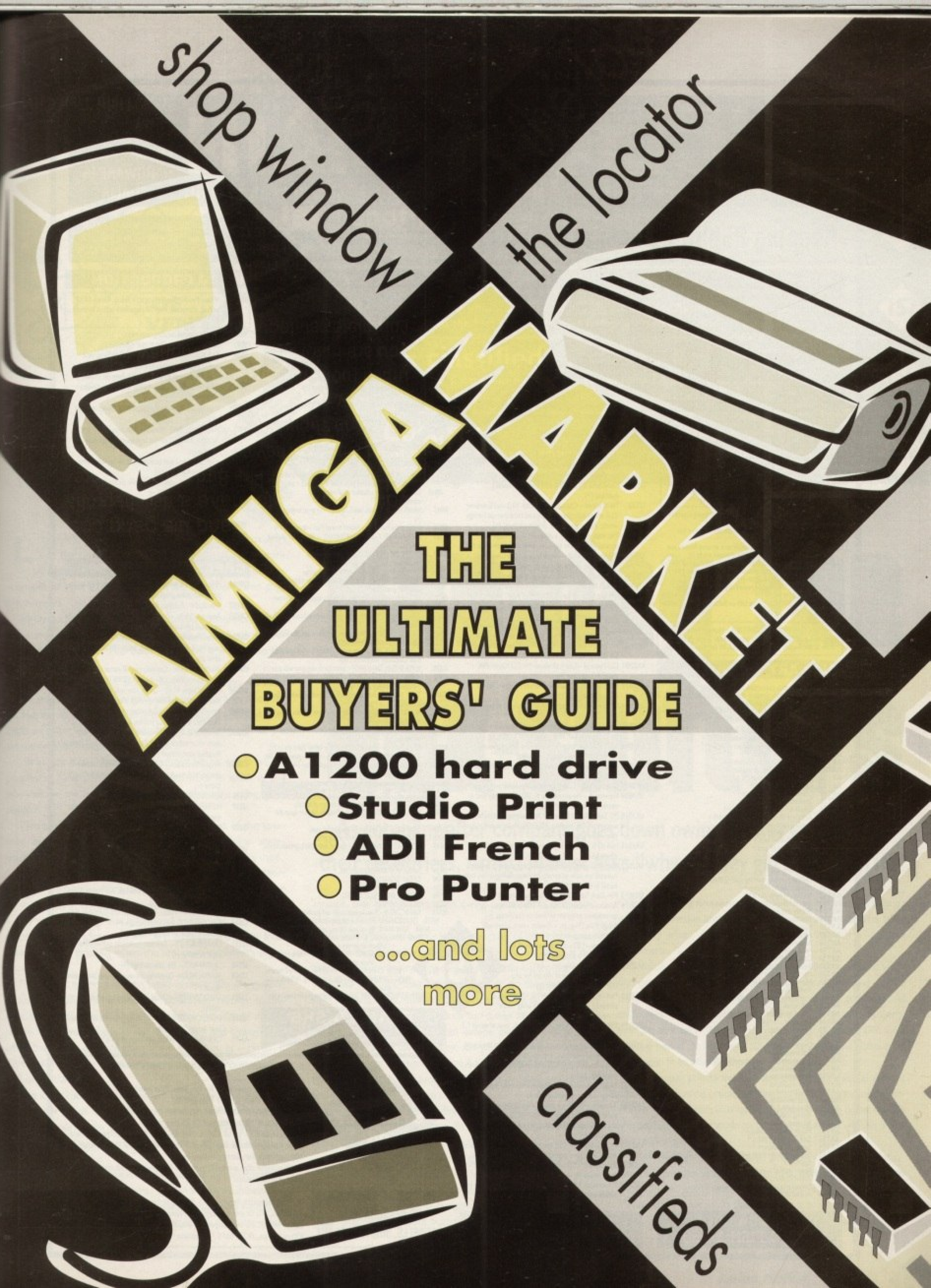
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- **UU046** NO ERRORS – Makes unusable hard errored floppies and hard disks usable by hiding the damaged tracks (+)
- **UU047** LOG INFO V1.2 – Amiga shopper said this is one of the best shareware progs around. Helps estimate your phone costs when using N-comm (+)
- **UU049** BON APETIT – Keep a record of your recipes – some included (+)
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**L003 THE FINAL FRONTIER – Having recently received a 10/10 rating this superb Star Trek Fanzine is now licenceware and costs just £6.00 for the 4 disk set**

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- The clip art in this collection is v.high quality
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- **ART03** Religious – full of holy clip art (3 disks) +
- **ART04** WW1 Aircraft (1 disk) +
- **ART05** Men 2 disks full of men at work +
- **ART06** Women 2 disks full of women! +
- **ART08** Business – office clip art (2 disks)+
- **ART07** Kids clip art (2 disks) +
- **ART09** Office – more of the same +
- **ART10** Students clip art +
- **ART11** Saletime – useful stuff inc. logos +
- **ART12** Xmas – a bit of Xmas cheer (3 disks) +
- **ART13** Punch – cartoons etc (3 disks) +
- **ART14** Animals – v.high quality pics +
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- **ART20** Olympic – more sporting stuff (2 disk) +
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- **ART49** More animals +
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- **ART53** Golf humour (2 disks) +
- **ART54** Space and transport +
- **ART55** Softscene2 – rural clip art +
- **ART56** Sports 3 +
- **ART57** Navy – lots of navy type pics +
- **ART58** Travel (2 disks) +
- **ART59** Border and alphabet clips +
- **ART60** Acents and flashes +

**We now have FRED FISH 1-750**

### USEFUL UTILITIES

- **UU027** Filofax – Reminds you of important appointments (+).
- **UU028** Bible (4 disks) – The complete King James Bible.
- **UU029** Tarot II – Read your own stars (2 disks)
- **U384** Cyclops V1.0. Art creation package. Create Plasmas etc. (+).
- **U527** Professional D-Copy V3.0 – As good as most commercial copiers.
- **U524** Intro Makers Kit – Make own intro screens with IFF pics, digitised samples and vertical/horizontal scrolled messages. (+).
- **U528** Multiplayer – Claims to be the most powerful, versatile music player for the Amiga (+).
- **U517** Kefrens Font Editors and Boot Menu Maker.
- **U325** Label Maker – Make your own labels.
- **UU030** Understanding Amos – tutorial (+).
- **U508** 175 Utilities – The most on one disk.
- **U531** Powerbase V3.2 – Powerful and user friendly database (+).
- **U533** Thrallbound – Contains spellcheck V1.3 and Examiner V1.0 which help you to learn and tests you on foreign words. Also a good text adventure game (+).
- **U534** The main event – set a date and your Amiga will remind you – cross between calendar/alarm clock (+).
- **U535** Wordpower V1.3 – Word Utility, Spell Checking, Crosswords, Anagram solving (+).
- **U514** P.C. Emulator – Runs most P.C. Business Software. +
- **U385** Plus! (13 disks) – 13 Disks crammed with programs info etc. Entirely for A500 (+) and A600 users (+).
- **UU032** TDH Vol 1. – Magazine aimed at Amos users. Recommended (+).
- **U306** Strictly P.D. Essential Collection (4 disks) – Jam packed with utilities, games, music creators and printer utils.
- **UU001** A-Graph – Very easy to use – Make bar & line graphs + pie charts (+)
- **UU002** CLI Tutorial – Learn all about the CLI. Given 70% rating in magazine (+)
- **UU003** MESSYSID V2 – Reads and writes PC disks. Given magazine rating of 95% (+)
- **UU004** Pools Predictor – Increase your chances of becoming a millionaire (+)
- **UU005** Disk Optimiser – Brilliantly simple! Any disk loads up to 15 times faster. Mag rating of 93% (+)
- **UU006** A500 Plus Emulator – Emulate the Amiga plus on your 1.3 Amiga. Really works (1meg req)
- **UU007** Freecopy V1.1 – Removes password protection to allow copying (+)
- **UU008** Cursor V1.0 – Compiler for Amiga basic programs (+)
- **UU009** Browser II – An alternative to SID. Some may find it easier and better. Very popular! (+)
- **UU010** PC Task V1.04 – Powerful multitasking PC emulator, supports CGA graphics, MS DOS, Floppies and even your Hard Drive (+)
- **UU011** NIB V2.0 – Removes protection and copies. Very powerful (+)
- **UU012** Gators Graphic Gallery – Examples and step by step tutorials on how to create professional logos like ones found in demos (+)
- **UU013** Fish Tank Sim – Simulates an aquarium (+)
- **UU014** Analticalc Spread (2 disks) – This is the best spreadsheet program to date on the Amiga (+)
- **UU015** Amiga Punt Program – Predict which horse will win from past form (+)+
- **UU016** JR Comm v1.02 – Latest version of this useful modem program (+)
- **UU017** Beatrix Potter Clip Art – An excellent collection of clip art for any DTP program or-D-Paint (+)
- **UU018** Plotting and Graphics (2 disks) – Contains a powerful full featured plotting prog, and a computer aided drafting prog. (+)
- **UU019** DB – A database with up to 50 fields, max of about 1.2 million records (+)
- **UU020** Home Manager – A great all in one address book with an inventory database + to do list (+)
- **UU021** Astro Pro Astrology –The best astrology program on the Amiga by far. (+)
- **UU022** Multidos V1.12 – After this disk has been installed your Amiga drives can read IBM disks (+)
- **UO024** Textplus V4.0 (E) – Latest update of this excellent word processor program. Now compatible with Tex, the professional typesetting prog. Found in the Fish collection (+)
- **UO025** Amos Lesson 1 – Find out how to get the most out of Amos. Had good review (+)
- **UO026** Edword 2.2 – Best text editor around. Received 9/10 from Amiga Shopper (+)
- **UO027** Megacolour V1.0 – A program which transforms a b/w screen into a full colour screen (+)

**We now have T-BAG 1-61**

### GAMES & EDUCATION

**We now have Assassins compilation games 1-41.**

**75p**

- **N001** Total Concepts (2 disks) – Very well presented story books about Astronomy and Dinosaurs (+)
- **N002** American Football Coach – Play the role of an American football manager (+)
- **N003** Battlements – Similar to Hunchback on the Spectrum and C64 (+)
- **N004** Othello – The best PD version of this classic board game. Adjust skill level and facility to review where you went wrong (+)
- **N005** Crazy Sue – The best public domain platform game.
- **N006** Superleague Manager – Football management game (+)
- **N007** Metro – Mini Sim City (+)
- **N008** Smash TV the Rip Off – Great stuff (+)
- **N009** Henry in Panic – Jet Set Willy clone (+)
- **N010** Mister & Missis – Amusing and cute platform/arcade adventure with two characters to control. Excellent fun! (+)
- **N012** Caloriebase – Received 89% in CU Amiga. Keep a daily database of your calorie intake. Useful for dieters (+)
- **N013** Back Talk – Discusses common lower back problems, the causes and treatments given. Uses detailed pics + anims (+)
- **N014** Training Log – Make a detailed log of your fitness training (+)
- **N015** Spanish, French, German, Italian Tutors – Four great language tutors (+)
- **N016** A Visit to the Red Planet – Guided tour of Mars – fascinating! (+).
- **G509** ADDAMS FAMILY – Help rescue the family in this splendid playback caper (+)
- **G502** DELUXE PACMAN v.12 – Excellent version of the old classic (+)
- **G503** WAGGLE AWAY – Bizzare joystick waggling games
- **G504** DECENDER GAME – Clone of a old arcade classic tempest with vectorised graphics (+)
- **G505** ACT OF WAR – This risk clone recieved a stonking review from Amiga Format (+)
- **G506** GRAND PRIX SIM – See if your'e got the brain to be the next Nigel Mansell
- **G507** A.N.N.B. – Adolescent Mutant Ninja Bedsprings Leap into action in this amusing game (+)
- **G508** GENERAL ELECTION – Take part in ageneral election with this superb simulation workbench 2 only
- **G509** SUPER SKODA CHALLENGE – Smart car driving game with guns (+)
- **G396** FORMULA ONE CHALLENGE – 4 people can play in this excellent management strategy game (+).
- **G397** TANK ATTACK – Attempt to storm H.Q. avoiding enemy tanks – good shoot em up (+).
- **G398** TOP SECRET – Great text adventure with cute graphics. Given 100% in magazine review (+).
- **G399** TOMCAT – Fly your F-15 against enemy planes, ships and gun towers (+).
- **G400** FIGHTER PILOT – Superb 1st World War fighter shoot em up (+).
- **G380** CARD, BOARD AND ARCADE GAMES – 13 great games on 1 disk.
- **G381** P.D. PUZZLES – Includes puzzle pro + puzzle maker. Highly recommended.

### DEMOS & MUSIC

- **D480** FRACTALE – Excellent demo of the history of fractals.
- **D483** ALCATRAZ ODYSSEY (5 disks) – Probably the best demo this year.
- **D487** WWF PICS – The clearest Hi-Res pics I've seen.
- **D499** RAUNCHY SLIDES – Pictures of pretty girls.
- **D507** SCHWARZTOONS (3 disks) – Packed with superb cartoon demos by Eric Schwarz.
- **D130** SAM FOX SLIDESHOW.
- **D129** MARIA WHITAKER SLIDESHOW.
- **D470** KATHY LLOYD SLIDESHOW.
- **D316** MARIA WHITAKER ANIM.
- **D170** GIRLS OF SPORT ILLUSTRATED.
- **D500** DIGITAL DAMSELS.
- **M374** HARDCORE III – Pumping rave music and graphics.
- **M376** TECHNOMANIA '91 – Wire this into your Hi-Fi – excellent.
- **M378** NEW WAVE. Slip on your slip-ons and boogie down.
- **M405** EXPRESSIONS 3 – 3 Tracks with 27 minutes worth of brilliant house/rave music.
- **M365** ALCATRAZ – More than music – Highly original music and demo.
- **M352** CHART TECHNO 1 – 25 mins of altern-8 remixes.
- **M356** BANGING RAVES – The 2nd Coming. 11 Bands in this great remix.
- **M359** SUPERSYNTHS VOL 1+2 (1Mb) – Great graphics and music.

**75p**

### BLANK DISKS

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### VIDEO PRODUCTION

- **V001** **Video Production Package (4 disks). Given 10/10 rating, complete with 50 page instruction manual – £10.00 (+).**
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- **V003** Turbotitler – Add subtitles to your videos (+)
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- **V005** Video Production (2 disks) – Packed with video + Genlock utilities (+)
- **V006** Video Screens 1 – Background pictures for video production (+)
- **V007** Video & Anim: Video DB – keeps track of your video tape collection. RTAP lets you run large anims on small mem machines (+)
- **V008** Image Lab – Like a mini art dept. Tools on tap – does fades, colour bars & grey bars (+)
- **V009** Video: Stillstore – used to create over the shoulder graphic inserts like the 9 o'clock news
- **VO010** Shades & Fades Animfader – A utility to fade screens in & out. Superview will display IFF pics. Turbotitle creates subtitles (+)
- **VO011** Androids Back Video Grounds – Selection of B/G pictures (+)
- **VO012** Harlequin Video Art & Font Disks (3 disks) – After its review in CU Amiga shot to No 1 in sales chart. Excellent (+)

### CREATIVE UTILITIES

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- **CR008** Amosbrot V1.1(A) – This update has even more Fractal types which include Logistic Equation, Coast Lines & Trees – Received good reviews (+)
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- **U082** VOICES – Add speech to your demos etc. (+)
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- **U315** ULTIMATE ICONS – Includes Icon Lab, Icon Master & Icon Meister – splendid disk (+)
- **U321** SUPA FONTS – Masses of them for use with D-Paint etc (+)
- **U079** ELECTROCAD – Impressive package (+)
- **U078** MCAD – Great 3D Design Package (+)
- **U331** LAND BUILD 3.2 – Generate landscapes and view from any angle. Amazing! (+)
- **U346** ULTRAPAINT – Fab paint package (+)
- **U364** SCREEN MOD – Customise the way programs and screens appear (+)
- **U366** SHADOW DEMO MAKER – 3 Brilliant demo making utilities
- **U500** DEMO CREATOR PACK (6 DISKS) – Get the most out of your Amiga - Get creative.
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CONTENTS



A-Z OF VFM

# Banning the box-shifters

## As company after company goes down owing money or goods to their customers, Amiga Market asks "why do they get away with it?"

Look at the scenario – a new advertisement appears in the computer press from a bright young company of aggressive retailers, low on prices and long on promises of next day delivery, and it's a two or three page extravaganza.

Surely such a bright, obviously expensive advert could only come from a big company? And just look at the huge number of products on offer.. This outfit must have a warehouse the size of Wembley!

Now look at the other side of the coin. Joe Bloggs is a shark with a greedy streak a mile wide and scant regard for the public. He sits at an Amiga with a copy of PageStream and concocts an advertisement backed up by a company with all the substance of an oral promise – hot air.

He knows a few distributors and can get his hands on the peripherals he is advertising, but has no stock to speak of and won't order any until he sees which products are going to be popular.

Two possibilities from the opposite extremes of the spectrum, but either one of which can be lurking behind an advertisement from a company the customer has never before used.

The problem is that there is very little one can do to sort the good companies from the bad. One can phone them and do some fishing, ask around, or simply wait six months and see if they're still trading, but in the end usually the only way to test a mail order company's mettle is to order something from them, and this is often when the innocent customer's nightmare begins.

Though the majority of Amiga mail order outfits are genuine and make all efforts to ensure prompt delivery, efficient technical support and refunds where required, a minority of disreputable, dishonest companies will take orders and money even when they know they are going down the tubes, or – rarely, it has to be admitted – will trade from the off as the equivalent of mail order thieves.

Too many companies take orders by cheque and credit card only for the goods ordered not to turn up, and the first thing many customers know of this is when the company goes bust, at which time they take a back seat in the queue of creditors waiting for payment.

Shouldn't the government be doing something about this situation? Time after time, it seems, the same dodgy businessmen (to award them an undeserved accolade) crop up in industries across the economy to start companies which trade for a few months, then go into liquidation owing thousands to creditors and customers alike.

If a motorist consistently breaks the rules of the road, he or she is banned for a period, sometimes for life, yet there is no requirement for business people to pass tests before they are set loose on the unsuspecting public, nor do they lose their right to trade if they show they are incompetent or dishonest.

When a company is taken into liquidation by its own directors, those directors will often escape personal liability for debts occurred by the company, and while this is a protection which is vital for entrepreneurs to be encouraged to take risks, those who gamble irresponsibly with other people's money are too often allowed to escape scot-free.

Only when a company's directors are taken to court and declared personally bankrupt do they have to prove themselves worthy of the right to trade once more.

In the vast majority of cases, this does not happen, and when a company is registered as a limited company the directors have little or no liability in any case.

What is clear is that some government agency, such as a Department of Trade and Industry ombudsman or the existing Office of Trading Standards, should be appointed to check up on existing businesses and to examine the circumstances of a failed company when asked to by creditors or out-of-pocket customers.

If these circumstances showed that the directors acted without due regard to ethical business practice (assuming such a thing exists in the 90s) or to the interests of their creditors and customers, both of whom invest money and trust in a company, then the directors' "licence" to trade should be withdrawn for a punitive period or until such time as they can show themselves once again fit to warrant the trust of the public.

Encouraging private industry and the entrepreneurial spirit is one thing – allowing crooks and thieves to pose as genuine trustworthy business people is quite another. Only by tightening the present *laissez-faire* attitude to business regulation will this situation be changed.

Only through the continued pressure of disgruntled customers – perhaps writing to their MPs, perhaps complaining to the TSO – will such regulation be introduced.

You know what to do the next time a box-shifter takes your money and runs, don't you?

# Shop Window

**A large and varied selection of equipment comes under scrutiny from the *AC* team**

## ADI French

Anyone who's three million years old is bound to know a thing or two unless they've been comatose for the past couple of million, and it appears that friendly extra-terrestrial ADI knows quite a lot.

No matter that he originated in a large grey asteroid called M823 – this rather cute, ET-type character whose animated head appears near the top left of the screen has knowledge of a great many earthly things, too.

One thing he knows – and what we're concerned with here – is how to teach French to English kids aged from 11 up to 15 (and adults, too, I've noticed!).

ADI French applications come in four age groupings – 11 to 12, 12 to 13, 13 to 14 and 14 to 15, and are in harmony with National Curriculum French for secondary school children.

Rather than the no frills, let's-get-on-with-the-lesson approach of some educational programs (and teachers!), there are rewards in the form of animations and games which make the learning that much easier.

ADI provides an inventive and entertaining interface. He occasionally gets angry if you click your mouse pointer on him too many times, falls asleep if he gets no input for a while, and ticks you off if he suspects you're being sloppy in your response to his questions. But most of the time, he's very helpful and informative.

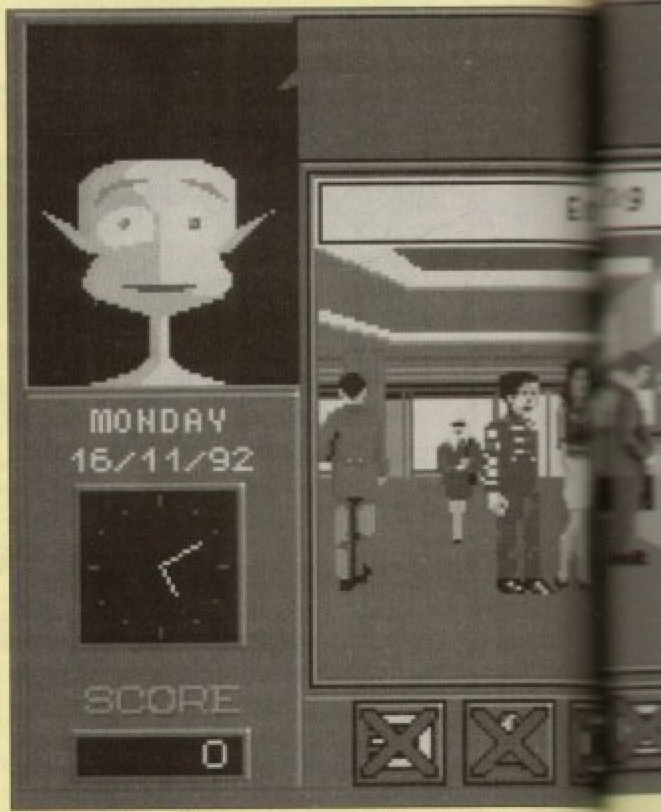
When you buy an ADI application – and the range, incidentally, also includes English and Maths for similar age groupings – you get more than the average education package offers.

There are two disks – one containing the ADI "environment" and the other the application, or lessons. First, you load the environment. This in itself provides many facilities, including a pop-up calculator, notebook and diary, and facilities to write a letter to disk for a friend who also has ADI, or to read a letter from a friend, using passwords for secrecy.

There are also several documents that can be brought to the screen, complete with animations, on a variety of subjects like computing, proverbs and sayings, the water cycle and volcanoes, and, initially, one game that you can play purely for entertainment.

The number of games to choose from increases as you earn points during application work, up to a maximum of nine.

The ADI environment has a "control strip" of icons across the bottom of the screen, through which everything can be accessed. For those who prefer, function keys can be used instead. There is an environment for




each of the age groupings (which, as you may have guessed, correspond to secondary school "years" seven to ten), and you can use as many available applications as you like with each environment.

If you click on the first icon, or press F1, you will be asked if you want an existing application, or if you want a new one – unless you're using ADI for the first time and you haven't installed an application yet, in which case the only option is a new application.

You're then prompted to change to your application disk – though hard drive users will not have this inconvenience once applications are installed.

So much for the environment – what are the actual lessons like? I dipped into French for all four age groupings and found the programs remarkably good.

Not being noted for my linguistic ability, I made rather heavy use of the help system (as ADI kept telling me, that's what it's there for) and was soon able to move parts of jumbled sentences around to form proper ones, chooses correct sentence endings, answer "vrai" or "faux" (true or false) to English translations of French sentences, and click correct meanings of given words.

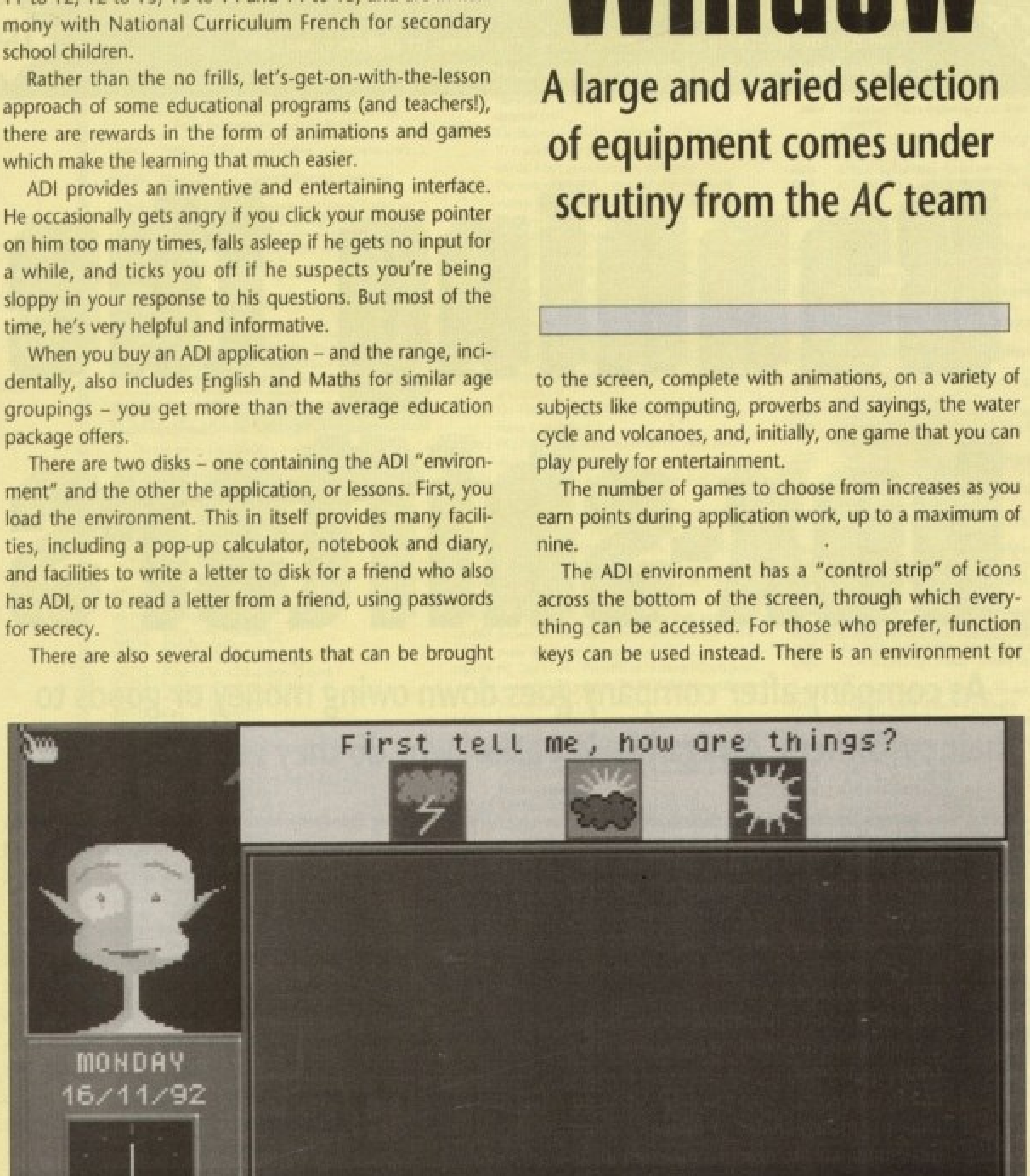
Each application is divided into chapters, which in turn are divided into sub-chapters. For instance, on the French 13/14 disk, Chapter 6: Services is divided into At the Post Office, Making a Telephone Call and At the Bank.

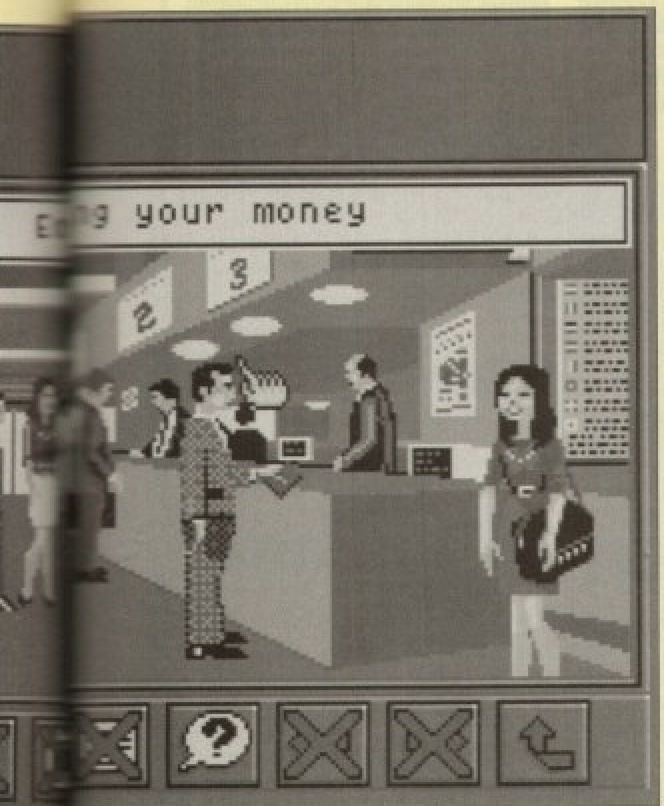
The lessons are easy to follow, and well-geared to the National Curriculum for the years they are aimed at.

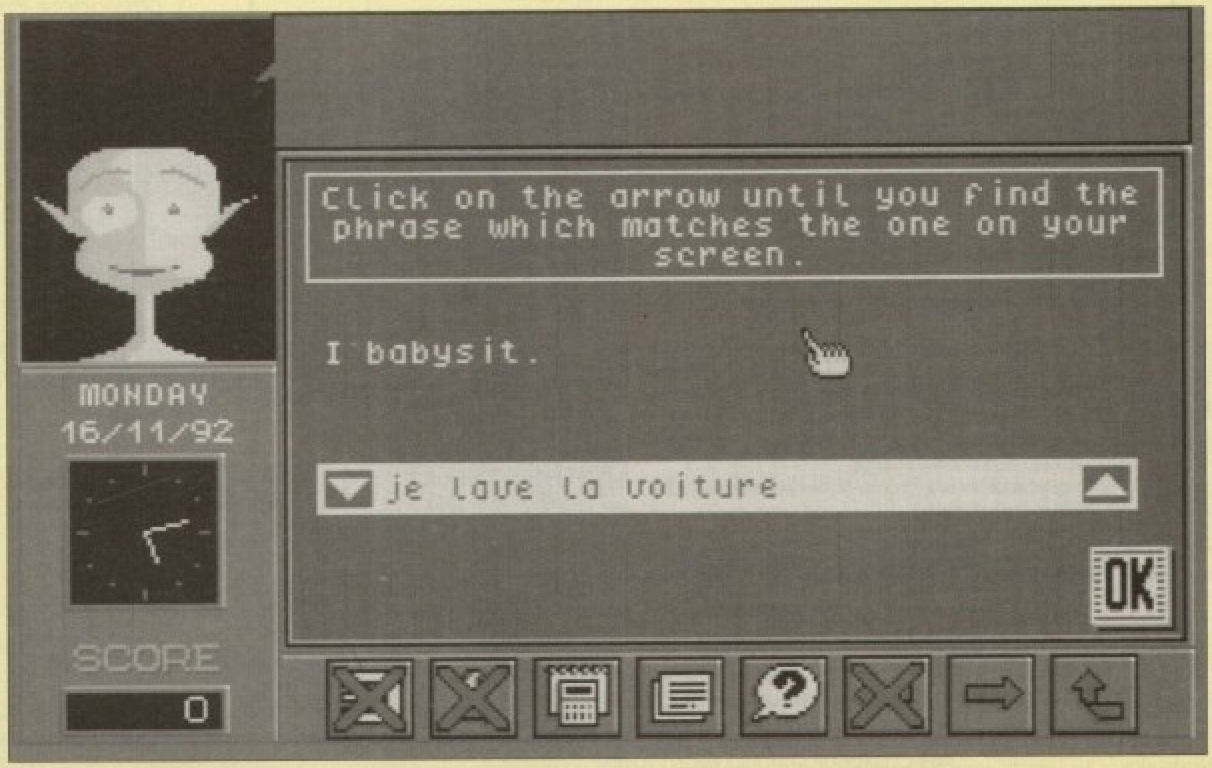
Sound is not a particularly strong point – there's little apart from the odd whistly noise from ADI – though that's hardly important in an educational program for older children.

However, one would have thought a subject like French would lend itself to some sampled or recorded speech. Perhaps this will come in time.

The ADI character is fine for younger children, but a 15-year-old I asked to try it out was not terribly

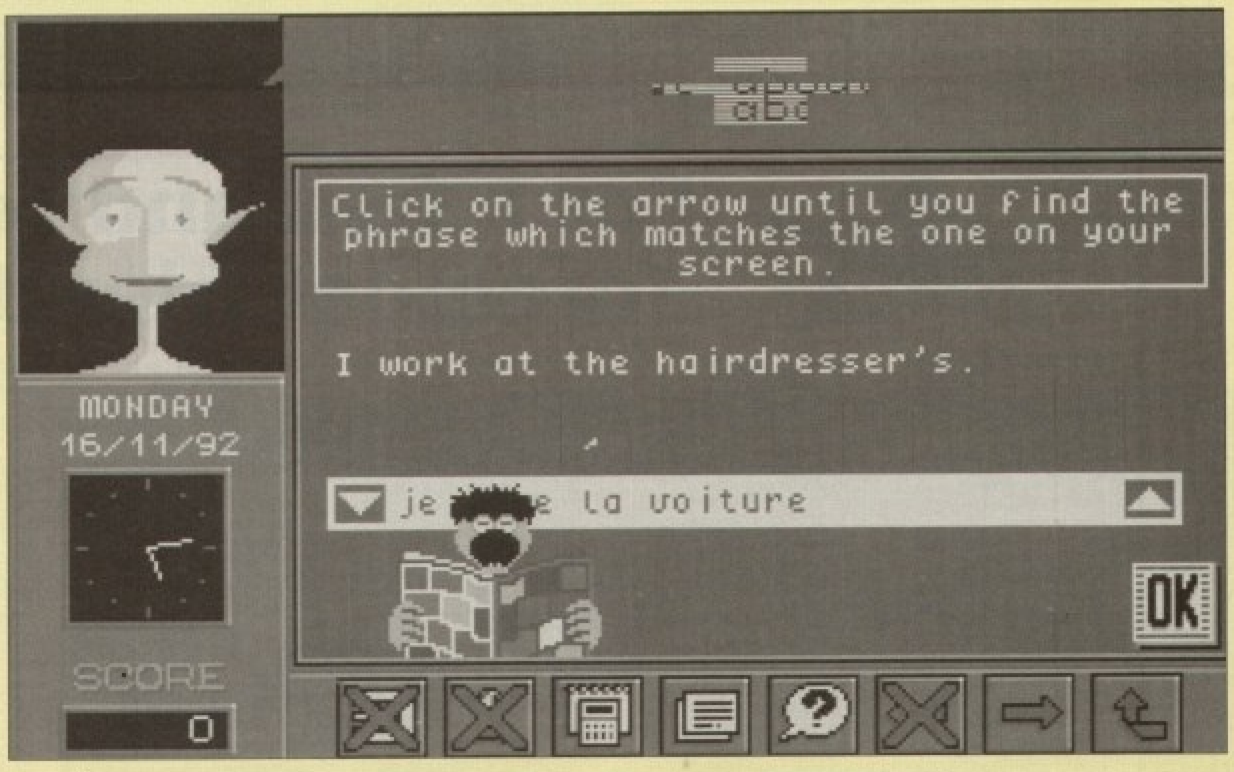





impressed. However, she conceded the package as a whole was better than most she'd used. And so, *au revoir moi petit pommes des terre* – you see, it does work!

ADI French
Price: £25.99
Supplier: Europress Software
Phone: 0625 859333




## A1200 hard drive

With the new A1200 having an internal IDE hard drive controller built in, several companies are now marketing compatible hard drives. HiQ are one of these companies. They have three sizes of drive currently available which are 60Mb at £199, 80Mb at £249 and 130Mb at £349.

Unfortunately due to size limitations inside the A1200 you can only fit a 2.5in hard drive in and as usual the smaller something is the more expensive it is. The drives which HiQ supply are made by Western Digital who are about to release a new improved version of their drive.

When you purchase one of their drives you get the drive, a ribbon cable, instructions and hard drive installation software. Fitting the hard drive is a reasonably easy job if you can use a screwdriver – all you really have to do is remove the case, connect the ribbon cable to the pins on the motherboard and to the hard drive, and away you go.

IDE interfaces are capable of controlling two drives, but you would need a different cable which shouldn't be too difficult to get hold of.

The main problem with fitting two drives is the lack of space inside the machine, but it would be possible to connect a longer cable and run it through the unused port on the back of the A1200 to an external drive fitted in a box.

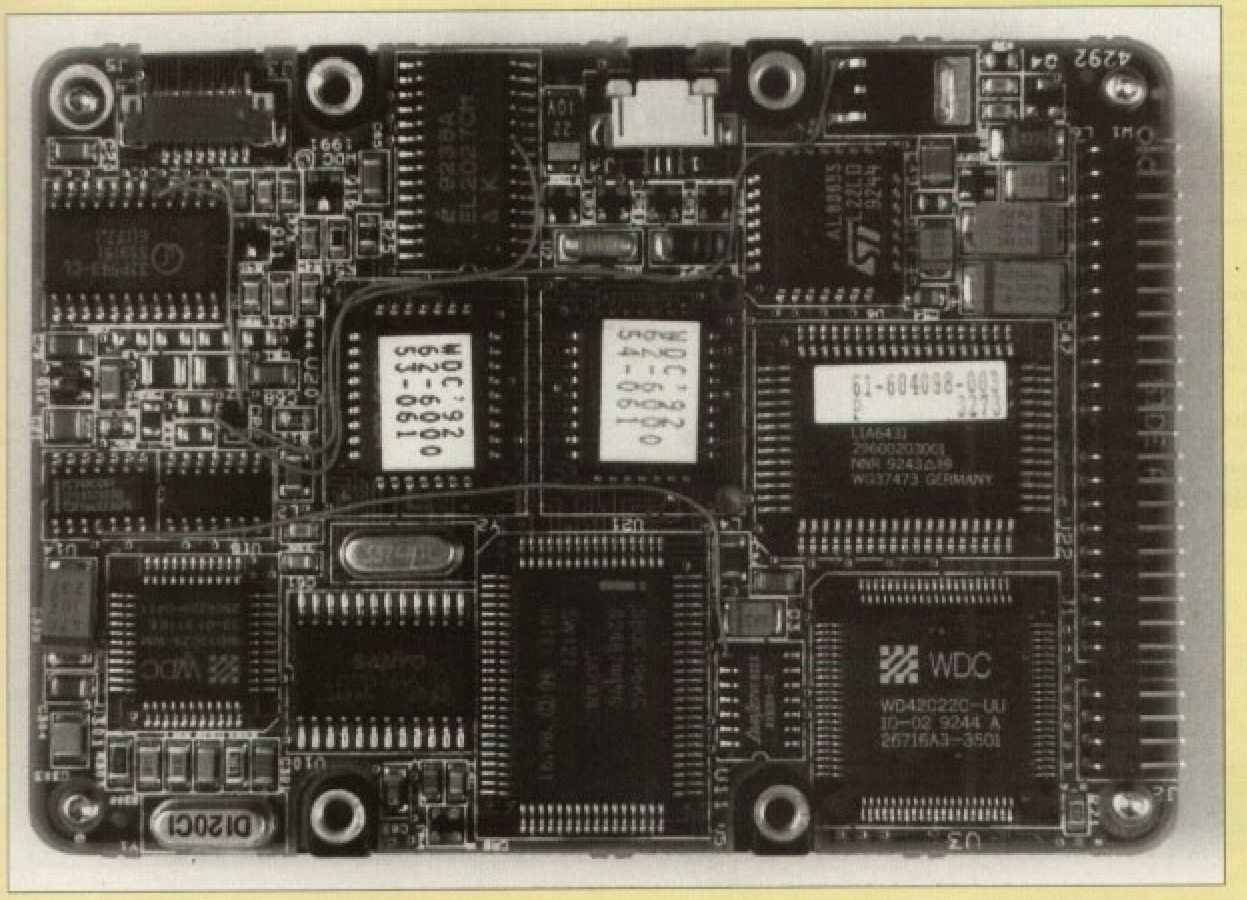
The only problem you will encounter in fitting the hard drive yourself is the fact that it will invalidate your warranty. By the time you read this though there should be several companies who are authorised to fit hard drives into the new A1200 without invalidating your warranty.

Most companies at the moment are offering to fit their drives for you and then give you their own warranty, but this does not include on-site maintenance. So if your A1200 then goes faulty your will have to return it to the dealer you purchased the drive from.

The drive we had from HiQ for this review was a 80Mb version with a transfer rate of about 400k per second and an access time of around 14 to 16ms. As mentioned earlier Western Digital are about to update their drives so this could mean a speed increase on both access times and transfer rates.

Once you have your drive fitted it's time to prepare it and format it. This can get a little confusing if you're new to hard drives, but the software provided with HiQ's drive is quite easy to operate.

The main problem you will encounter on the preparation side of the hard drive is the fact that every time you try telling the software you have installed an IDE drive it refuses ➤




to recognise it. This is caused by the fact that the A1200 thinks its IDE interface is really a SCSI interface.

So when prepping a drive in the A1200, simply tell the software to look for a SCSI device and not an IDE one. After sorting that out you then have to decide how many partitions you want. Some people create two partitions – one about 10Mb for the Workbench, and the rest of the drive for the second partition.

Once you have it prepped and formatted, you can use the install software on the disk you get with the drive to install all your Workbench.

It's one of the easiest drives to install, and excellent value for money. If you're after one for your A1200, you won't go far wrong with this.

**HiQ A1200 hard drive**
**Supplier: HiQ Limited**
**Price: 081-909 2092**

## Plants for all Seasons

Plants for all Seasons is, as you have probably guessed, aimed at gardeners, garden centres or people with a horticultural interest. It's a database program used to store various information on plants of all kinds.

The company who produce this program also produce a botanical version which is similar to this, the Gardener version, but includes much more detail on individual plants. The Botanical version would be more suited to people who are in the plant or flower trade such as garden centres and horticultural clubs.

To run this program you need at least 1.5Mb of RAM and two disk drives, although we ran the program on an A500+ with 3Mb RAM and a GVP hard drive.

It has to be said that using it from floppy drive can become rather slow, so a hard drive is definitely recommended.

To install PFAS onto hard disk you simply create an empty drawer and rename it as anything you want, then copy all the files from the three disks which PFAS comes on into your new drawer.

You then have to add three assign statements to your startup-sequence. The assign statements tell PFAS where to find all of its files. You can add the commands with almost any text editor – this procedure is explained in great detail in the manual.

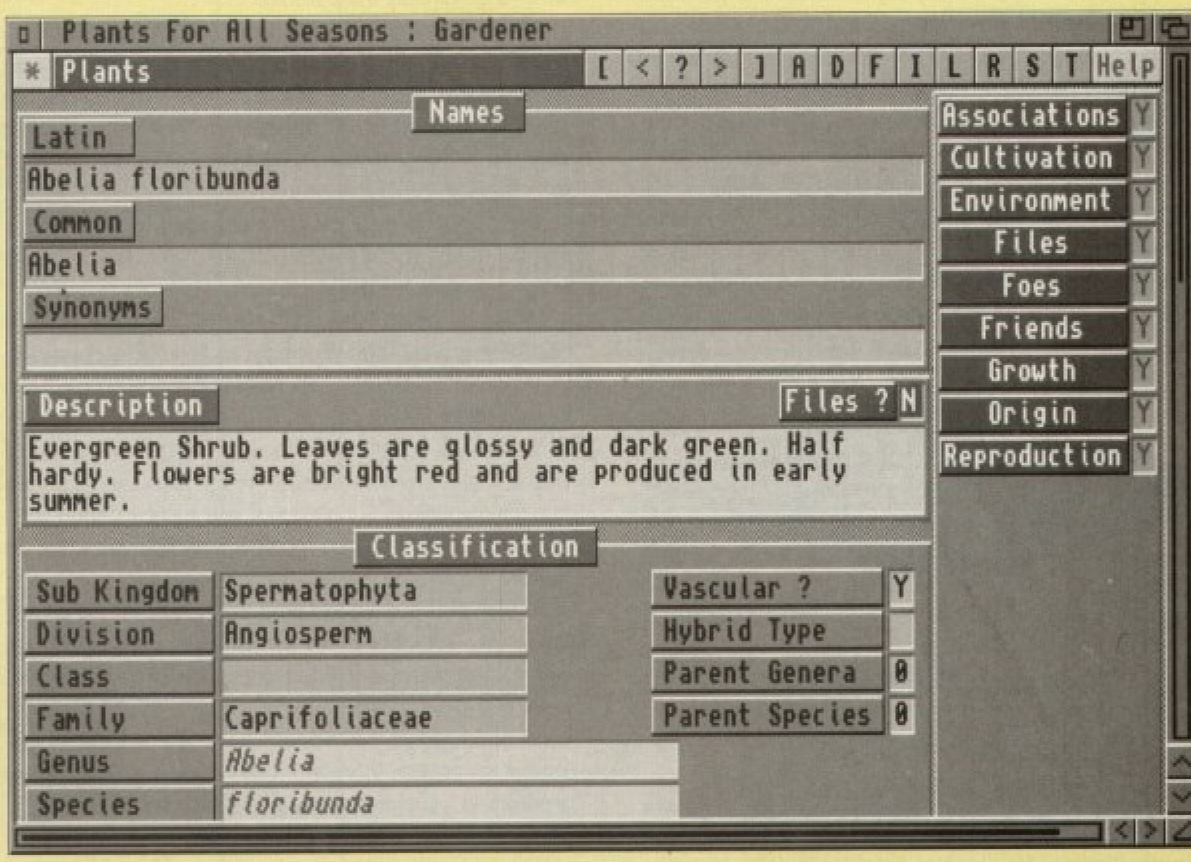
Once you have added the assign statements you have to reboot your machine to make the statements active. Running the program is then a simple matter of double clicking on its icon.

Even though we ran it from hard drive it still took several minutes to load. The main reason for this is that the program has to load all of the different page layouts into memory first.

Although this takes more time than just loading one at a time it makes it much faster when actually searching for individual plants.

Using Plants for all Seasons, you can recall files on plants by either their common or Latin names – this makes recalling files quite easy for someone with very little plant knowledge, ie me!

Once you have typed in the name of the plant you wish to look up, its main details will be displayed on-screen. You can scroll around the window viewing such things as



the plant's height, width, classification and a small description of how looks. Some plants have other files associated with them like pictures, environment, growth and cultivation.

If a plant has a sub-file connected to it, simply click on the appropriate box like Cultivation – you will then be presented with all the information about cultivating the particular plant. If it didn't have such a file attached to it you could then add the information for future reference.

PFAS has 1,000 plants indexed with ten pictures – quite a few of these files contain sub files as mentioned earlier. It was written using SuperBase 4, so it is possible to buy SuperBase and customise the layout or even add fields of information which you require but PFAS does not already have.

When loaded it has an easy to understand layout, which means that learning how to use this program takes very little time indeed – that's a good thing as the manual spends more time explaining how to use your Amiga than the program, going into such detail as how to upgrade your machine and explanations of error screens.

One of the most unusual things about PFAS is the way it is an on-going project, that is to say it's not finished nor can it ever be. As new strains of plants appear they will need adding to the program to keep it up to date.

The writers are asking people who buy this program to send in information which is not already included in it and in return if used the person responsible will receive royalties according to how much information they send in and how important it is.

This makes buying this program more like joining a massive library of plant-related information. Once you are a registered user you will be sent information on data disks containing files on plants which are not already included. These disks cost £7, not including postage and packing..

As well as storing all this information about plants, PFAS also has the facility to store names and addresses of garden centres, and even gardening books. All in all this program has been well designed making it easy to use and update, although you would have to be an extremely keen gardener to want it.

**Plants for all Seasons**
**Suppliers: ARK (Applied Research Kernal)**
**Phone: 0983 551496**
**Price: £39.95**

## Studio Printer Software

Ever created a master piece of Amiga art only to see your picture turned into a muddy mess or worse? Well Studio Printer is designed to help. It is a software package which when installed creates a custom printer driver suited to your particular printer which is not only much improved over the Workbench drivers but is also more controllable.



The driver is designed to replace the existing Workbench one, so it can be used by other applications. But the new driver offers greater features and flexibility when used directly from Studio.

Studio offers features like the ability to print pictures in up to 16.7 million colours, load and print virtually any IFF file like IFF24 bit, Ham8 and EHB. Also you can print in 256 greyscale which at present is a vast improvement over the existing 16 greyscales that the Amiga can print in.

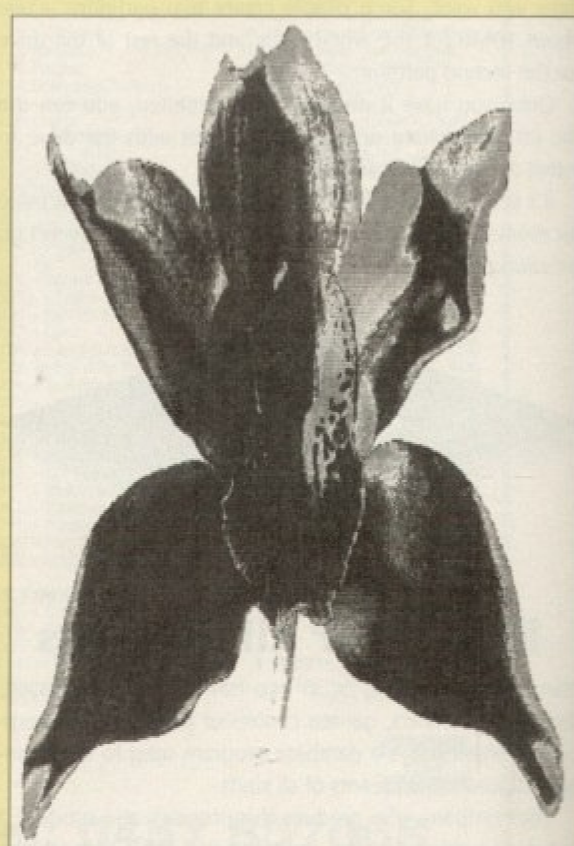
Before you can use Studio you have to install it. This can be done virtually automatically, with the software making most of the decisions.

When you start, the software will ask what kind of printer you have – it will create a driver and place it in your printer's drawer. It will then put the main program in a specified drawer.

Studio has drivers for virtually all dot matrix printers, DeskJets and laser printers, although it doesn't contain one for the Canon BubbleJets. If you have a Canon then you must contact Canon for their standard driver for an Amiga.

As well as being a good program for printing graphics, Studio has a special driver for use with the PageStream DTP package and the HP Laserjet which offers resolutions up to 600 dpi.

Once installed you should have the printer driver Studio has created in your printers drawer, a Studio prefs program in your prefs drawer and also the main Studio program in the directory you specified. Now you simply select the new printer driver from your standard Workbench printer prefs program. Judging by the number of letters we get about printer problems, software like this should do well. People struggle to find the correct printer driver for their printer. Also packages like DPaint give little control over printing, which can lead to very poor images being produced. If say you have an HP DeskJet 500C then



after installing Studio you can select the new driver in you printer prefs then load DPaint or any package which you wish to print from and produce a printout as usual.

Studio's new driver should produce some improved picture quality but it's best to print out pictures directly from the Studio software as then you will be able to take total control of how your image is printed.

When you load Studio you will be presented with a file requester asking which file you wish to print out. You will then be presented with a screen containing a large grid with a small box in the top left-hand corner.

This small outlined box is your file – you can drag the box to almost any size enabling you to print a standard A4 size picture on several pieces making your picture into poster size.

When you adjust the box to print the picture as a poster the software will work out how many pieces of paper will be needed and then proceed to print each part of the picture on a different piece of paper – you then stick all the pieces together.

As already mentioned, Studio can print 24-bit images if they are saved out as IFFs, but the trouble with files of this kind is their size.

If a picture file is 5Mb and your machine only has 1Mb then Studio will still be able to print it as it can print files without having to load all of the file in at once.

Once you have your image loaded and have set how large you want your printout, you can then start to make any adjustments to dither patterns, colour correction, DPI and paper dimensions. Once you think these are set correctly you just press the Print button. When Studio starts printing it only loads in part of the image and prints that section, then it moves on to the next section and so on.

This sounds as though it would make the printing slower but it doesn't probably because as it is loading and processing the printer is printing the previous information.

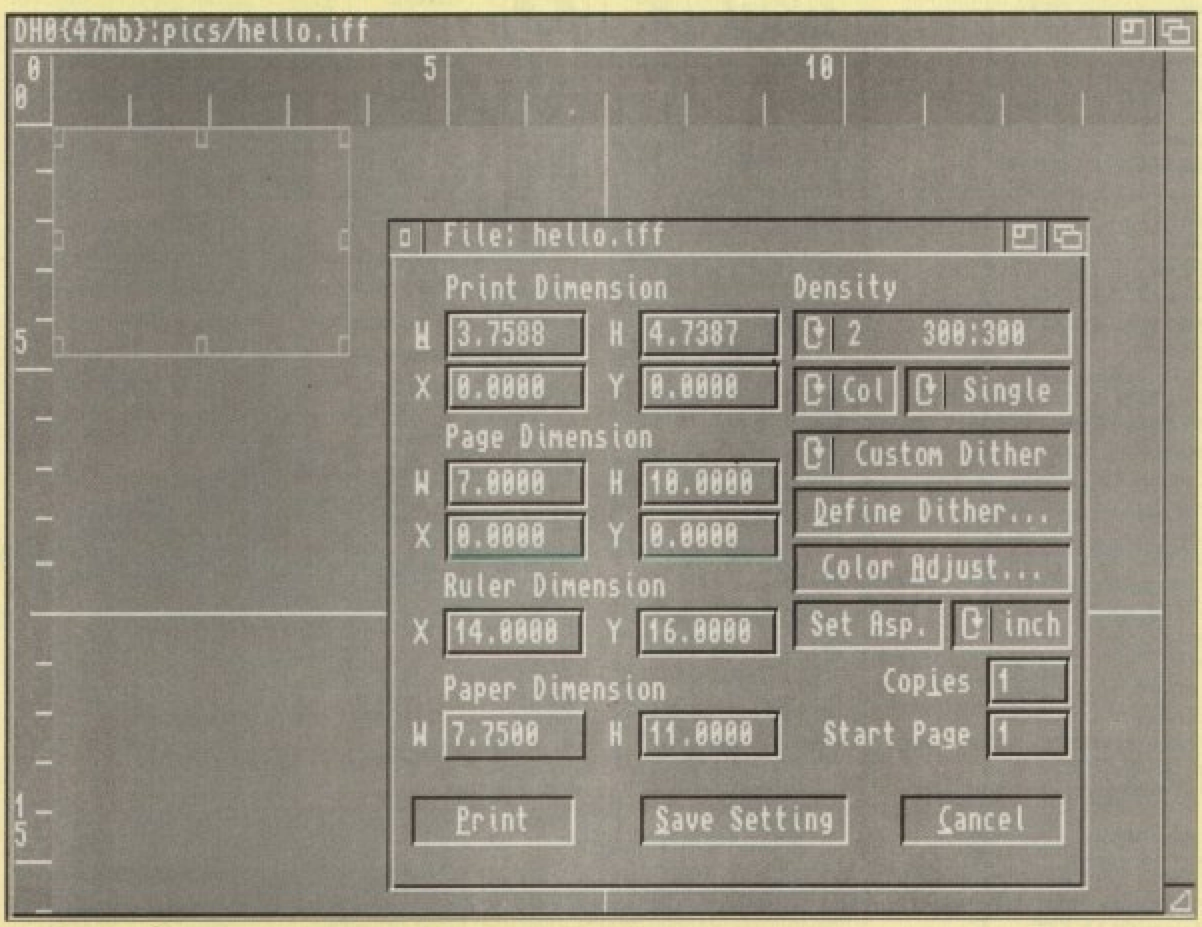
Although I didn't find the printing over-fast it was definitely faster and much better in quality than you would get printing from a standard Workbench printer driver.

You can obtain best results when you own either a laser or DeskJet printer as most of the Workbench drivers around for these are rather poor and don't take advantage of their more advanced features.

If once you have printed an image you think it's too dark or too red then there are plenty of buttons and sliders to help you fine tune your printer driver. All of the more advanced options are well explained in the manual, which goes into great detail on some sections.

Using this program will not give you brilliant printouts straight away as fine tuning it to your printer can take some time, but with a good read through the manual and a bit of trial and error with the settings your prints should start to improve quite considerably.

Studio Printer Software
Supplier: JAM
Phone: 0895 274449
Price: £49.95




## Pro Punter

How do you make a frowned-upon vice into a perfectly acceptable computer aided hobby/investment scheme? Easy, make it into a computer program and flog it as a high brow professional package – exactly what they've done with Pro Punter, a very well respected horse racing predictor program.

First created in 1987, Pro Punter has risen to be the biggest and more or less only predictor program available. For the first time ever it is available on the Amiga.

After booting up you are faced with several mouse-driven menus. They all look fairly baffling, and a quick fiddle results in confusion!

Referring to the manual, the light dawns that the vast majority of the program entails nothing but the entering of figures and facts about the horses themselves – form, weight, age, uncles... the list is endless.

There is also a database into which you have to input the physical characteristics of all the race courses which your horses are going to be running on.

This entails inputting no less than ten different fields of information for each course. This is just the beginning – win history, overnight data, sire and dam history... the list is endless.

Don't get me wrong, Pro Punter is a very clever peice of programming but you must have some conviction to keep the endless typing of figures up.

Obviously this inputting of information get easier and less frequent the more comprehensive your Pro Punter becomes but it is tedious to start off with.

But there is dual effect – yes, Pro Punter will give you estimations on races based upon the facts but by the time you have the program up and running to some degree of sophistication, you'll practically be Lester Piggot anyway.

If you are going to go out and buy Pro Punter to make cash fast, don't bother. You will have to get into typing, reading the *Racing Post* and various other things.

There are so many outside factors that it's hard to believe that it's possible to make that much money off Pro Punter. It can't give you luck, it can only give you a well educated guess based upon the facts.

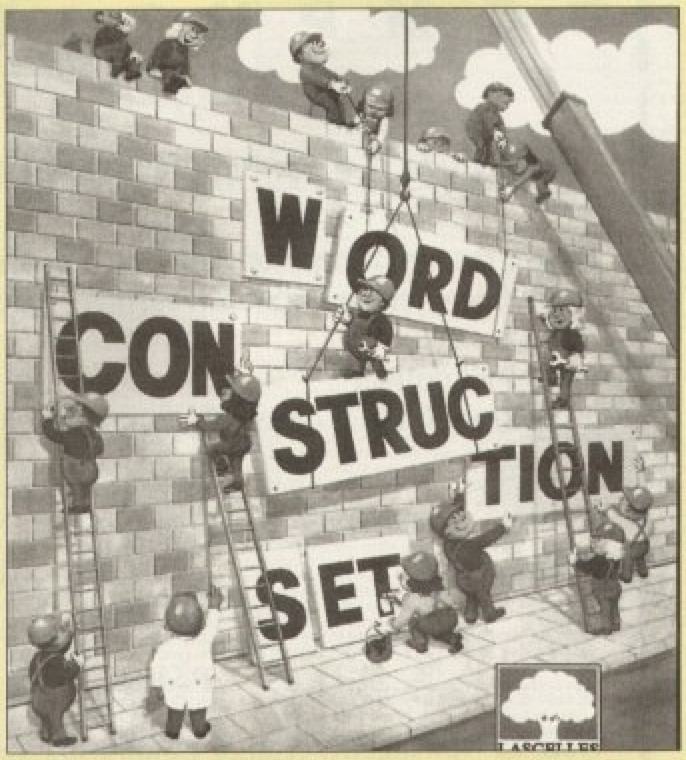
Pro Punter
Suppliers: DGA Software
Contact: 061-330 0184
Price: £99.99

## Word Construction Kit

With the growing concern over the number of illiterate school leavers this might be a welcome addition to many parents' software libraries.

It's been quite a while since we've seen an education package that deals with older primary school and early secondary school rather early primary school kids.

As you already gathered, Word Construction Kit is aimed at one particular point in a child's career instead of




being aimed at general learning like Noddy and other such recent releases. It is also geared to support the UK National Curriculum and several other English speaking country's standards.

Word Construction Kit aims to help word recognition and vocabulary. The programmers believe that the learning process is a lot quicker when the student has either the word groups or sounds or patterns to identify.

So the program goes through the process of repeating similar word groups and phonetics. Eventually this should build instantaneous recognition. It also enables the student to make up imaginary words from phonetic groups like Lewis Caroll's Brillig.

It's split into the construction of seven buildings, each needing a different mixture of phonetic and recognition skills. Each of the different blocks in the building needs a word to be formed for it to be laid.

The first major pitfall is that the title is given to each of the sections. They all have very daunting names such as Consonant Condominiums or Homophone Observatory. That alone is enough to put off many a student.

The last thing a pupil needs is to be baffled from the off. Once the fear of the long words has been overcome the student will realise that the exercises are very simple.

The only typing necessary is the entering of the pupil's name right at the very beginning. From then on is a case of choosing letter groups with the mouse pointer. The different construction sites are shown on it a map from which pupils may choose at will the exercise they wish to do.

After this has been chosen the pupil is faced with the bare bones of a building – scaffolding and so on. At the bottom of the screen are listed the tool icons with which the building is to be built. If the pupil get a word right then a section of the building will be built.

I know it sounds mundane but it is actually quite rewarding, and there are also some good speech samples that encourage you when you get it right.

The first tool available is the construction icon which will launch you straight into the group selection. The next is the rebuild option. This allows you to knock down completed sections and do them again, and is designed to make the pupil a bit more confident.

The rest of the tools listed at the bottom of the screen are for helping the pupil. The test option allows him or her to test out the word he or she has created. If the word is correct then it is accepted as part of the report, if not then they can go on to change it with out a blemish on the record.

Obviously this can be abused by students – they may just keep guessing until they get the word right, but honesty isn't something that an English program can teach.

The sound option makes the machine pronounce the full word once you have created it. That's all well and good but the Amiga version uses the awful Workbench voice synthesizer that rarely pronounces the word coherently.

Throughout Word Construction Kit the pupil is being assessed – how well he or she actual did is presented on a report card at the end.

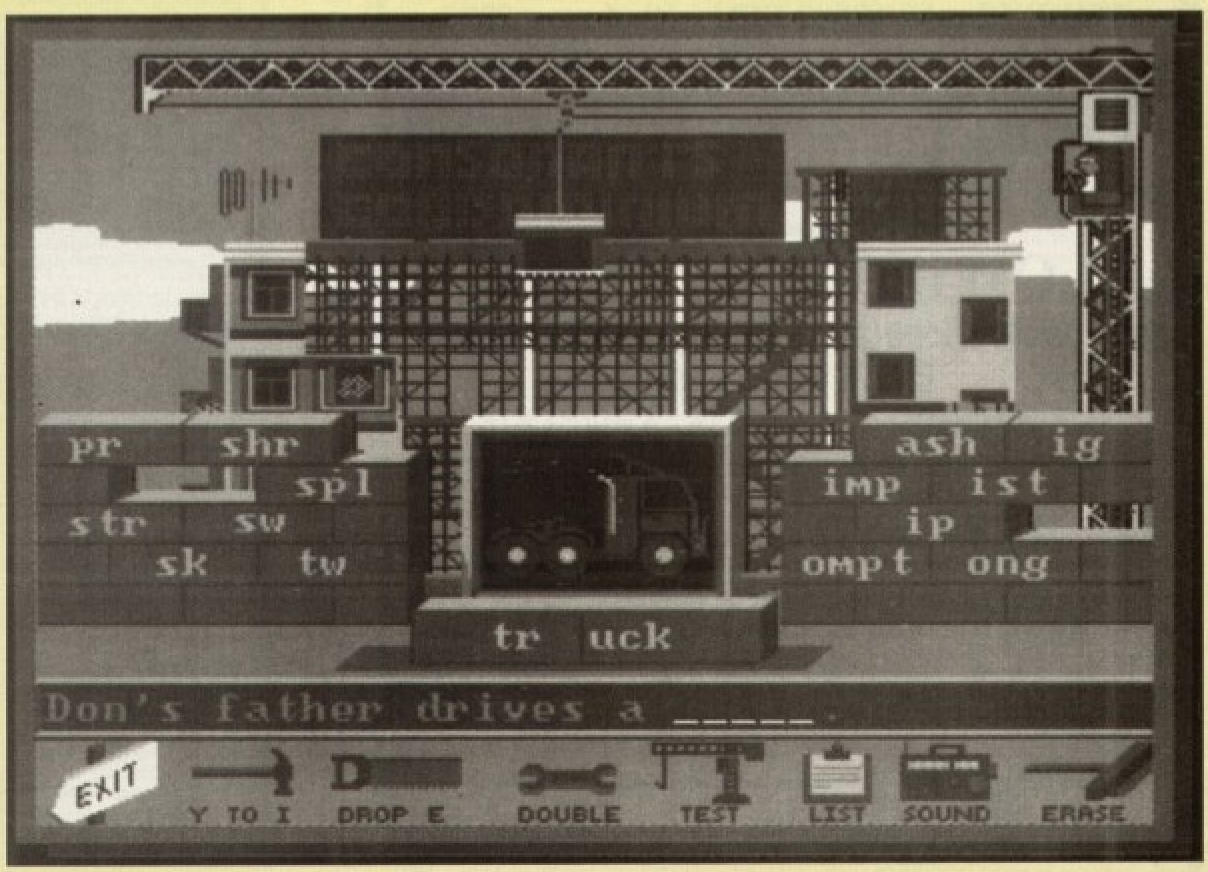
But this is an on-going assessment. If it was only one particular section which dragged the pupil down then would be possible to go back to the rebuild section and try and do better, this would in turn up the scoring.

After the pupil has successful gone through one or more of the exercises it is possible to print out a score sheet – the perfect reward for children who are using the program at school. It would also be an easy way for the teacher to keep a close eye on the child's progress without having to write reports and so on.

As the program progresses the word that has to be constructed get harder, going from two phonetic groups to three requiring the pupils to make such words as "misanthropic" and other words of scary length.

Word Construction Kit isn't a half bad education program. There is a lot more depth than usual and a better range so it doesn't pigeonhole itself. Also it doesn't patronise pupils – a very off-putting aspect of a lot of education software.

Word Constuction Kit
Supplier: Lascelles Productions
Phone: 0064 6878 9652
Price: £29.95



# AMIGA COMPUTING

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❑ ✗ **V298 NORTHC v1.3** The Complete C language with all files needed (2)
❑ ✗ **V301 EYE OF THE BEHOLDER** The hint Book with Maps, Strategy & Solution.
❑ ✗ **V323 ANALTICALC SPREAD SHEET** The best spread sheet. (2)
❑ ✗ **V332 AMIGA PUNT PROGRAM** Predict which horse will win the race
❑ ✗ **V339 SPECTRUM EMULATOR** Data Disk 1: The Adventure Classics
❑ ✗ **V350 BUSINESS CARD MAKER** Design your own Business cards.
❑ ✗ **V366 600 BUSINESS LETTERS** Over 600 Standard Business letters
❑ ✗ **V390 DESK TOP PUBLISHING** Extra features,Text & Graphics Editors
❑ ✗ **V392 AMICASH BANKIN** The best bankin program that I have ever used
❑ ✗ **V394 CHEMESTETICS v2.14** Program that draws molecules using the calotte model. Updated this Month
❑ ✗ **V401 WINDOWBENCH v1.0 (2)** An excellent Workbench 2 replacement / Upgrade for all WB v1.3 users.
❑ ✗ **V413 WORKSTATION** Not just another WB clone. It's a collection of utilities with the Workbench theme. (2)
❑ **V420 CURSOR BASIC COMPILER** Compile any Amiga Basic program
❑ ✗ **V424 ANTI-FLICKER** Said to stop the flicker in High Res mode during some Amiga program operations.
❑ ✗ **V431 IMPLODER v4.0** Reduces file size for storage on hard drives.
❑ ✗ **V433 ANIMATION STUDIO** Make your own little animations.
❑ ✗ **V444 PRINTER DRIVER DISK III** Now contains instructions on how to install them. Includes over 90
❑ ✗ **V479 CHESS & CHESS UTILITIES** A collection of chess related Puzzles.
❑ **V484 ADVENTURE SOLUTIONS** (2) Solutions for various games.
❑ ✗ **V489 AMIBASE PROFESSIONAL v2.0** Latest version of the excellent Database program. NEW FEATURES
❑ ✗ **V490 MESSY SID v2.0** Will read MS-Dos disks, Transfer any text files to & from the PC. So you can do work on an IBM or an Amiga & swap text.
❑ ✗ **V521 PLOTTING & GRAPHICS PLOTXY,** A powerful full featured plotting prog. **PLANS** A computer aided drafting prog. Requires ARP
❑ ✗ **V522 ARP V1.3 : Conman v1.3c** Makes many improvements to Dos. Includes full developers guide.
❑ ✗ **V523 DICE C COMPILER (2)** Matthew Dillons full featured powerful C compiler & environment system
❑ ✗ **V536 CATALOGUE UTILITIES** A collection of utilities used to Catalog disk/ Video & Tape collections (2)
❑ **V567 PRINTER DRIVER GENERATOR** A selection of utilities with various excellent Printer Driver Generators.
❑ ✗ **V569 DUNGEON MASTER MAPPER v1.1** You can design maps, for dungeons & Towns for use within any Advanced Dungeons & Dragons
❑ ✗ **V573 FILE & HD** HDClick v2.0, Selector to make HD Menus with gadgets. File Minder, For maintaining files & Directories. DosControl, Combines functions of many separate tools. (2)
❑ ✗ **V575 HOME BUSINESS PACK** Excellent selection of utilities based on word processing, Data Manag-ement, Spread Sheets, Accounts & Printing. (6)
❑ ✗ **V583 ICONEDITOR III v2.0,** Can create Icons upto 640x200 pixels. Icons, Edit & Create any Amiga icon.
❑ ✗ **V587 GELIGNITE FONTS (2)** A selection of fonts for use with any DTP Package or Dpaint disks.
❑ **V607 PRO TRACKER v2.2** Written by Lars Zap Hamre. Another update to the Ultimate sound making program.
❑ ✗ **V610 GOLF SCORES v1.64** It will record each round you play, Store it, make up an eclectic score NEW!
❑ ✗ **V611 FOOTBALL LEAGUE EDITOR v1.1** Want to update your teams league position as the results come in. Not A600
❑ ✗ **V620 ASPICE v3.2** Circuit Analysis A full featured program for electric circuit
❑ ✗ **V621 EDWORD v2.2** is a fully featured & operational Word processor
❑ **V624 NIB COPIER v2.0** Will copy in AmigaDos, Index Nibble modes, search mode & special parameter copy.
❑ ✗ **V627 DPAINT FONTS No's 1-3** (3) The latest selection. Fonts for use with any IFF Painting / DTP Program.
❑ **V635 IBeM EMULATOR v1.05** Is a CGA Colour IBM-PC Emulator written to run on any Amiga. Shareware version
❑ ✗ **V647 HACKS** A selection of WB Hacks that have been reviewed in CU
❑ **V648 TITANICS CRUNCHER v1.0** Cruncher with help & various protect modes includes speed changes.
❑ ✗ **V659 COMPUTER DIAGNOSTICS v9.1** Is there a problem with your computer! Then what is it.
❑ ✗ **V660 HOME MANAGER** This is a great all in one address book with an inventory database & To-do list
❑ ✗ **V661 VERTEX** Allows you to create 3d objects with-out using the X, Y & Z views. Loads Sculpt 3d/4d & Turbo Silver.
❑ **V662 DCOPY v3.0 PRO** You can select the speed of the disk drive, Copy modes, Dos, Nibcopy, Ver & safecopy.
❑ ✗ **V666 MODELLING OBJECTS (2)** Contains over 20 vector objects in image format. Perfect with Disk V661
❑ ✗ **V678 DRAW MAP v4.1 (2)** You can generate world maps in detail. ❑ ✗ 2Mb, ❑ ✗ 1.2Mb or ❑ ✗ 1Mb
❑ ✗ **V681 GAME TAMER v2.2** Get a hold of that extra hard game & Cheat.
❑ **V683 SUPER LOCK v1.01** Seal your disks / Hard drives for your eye's only. Protects with a Password.
❑ ✗ **V684 FONT CHARACTER EDITOR v1.0,** Also contains other utilities.
❑ ✗ **V685 ASTRO PRO ASTROLOGY** Best Astrology prog on the Amiga by far.
❑ ✗ **V686 MULTIDOS v1.12** After this program has been installed your Amiga drives can then read 720k IBM Disks.
❑ ✗ **V688 MAGNETIC PAGES v1.30** Creates disk based magazines with graphics.
❑ ⊕ **V690 WB v2.04 UTILITES (2)** This set contains the programs that should have been with WB 2.04+. They take full advantage of the many NEW capabilities that are available
❑ ✗ **V692 RACE RATER v1.6** Program for people who want info about horse races.
❑ ✗ **V696 POST v1.7** PostScript interpreter which implements the Adobe language. ARP
❑ ✗ **V698 AGRAPH v2.0** Brings the world a cheap draw Bar, Line, Area & Pie chart production/ presentation program
❑ ✗ **V700 PERM CHECK** Designed to take chore out of checking plans for winning lines
❑ ✗ **V701 STRATA v1.0** Is a landscape generating prog. Allows printing from any angle, position or magnification.
❑ ✗ **V702 EASY RAMOS FOR EASY AMOS** Update for Easy Amos user's.
❑ ✗ **V703 AMOS UPDATER DISK v1.34** A major update to the software. Directly update AMOS installed on a hard disc.
❑ ✗ **V704 AMOS COMPILER v1.34** Second AMOS Compiler Update.
❑ ✗ **V705 MED v3.21** Excellent update to the famous music program Med.
❑ ✗ **V710 AREXX TUTORIAL** Includes several sample Arexx scripts & sample progs. ARexx comes free on all WB v2.04+ disks.
❑ ✗ **V711 UNIX** Contains a working demo of Minix, A Unix workalike. Minix is system call compatable.
❑ ✗ **V712 PROTEUS BBS** Start your own BBS. Requires a modem.
❑ ⊕ **V713 COMUGRAPHIC FONTS** Will work with DPaint v4.1, ProPage, Page stream, Pagesetter & Workbench v2.04+
❑ ✗ **V715 THE COMPLETE BIBLE** With the entire text of the New Testament & Torah (Old Testament). 1Mb (3)
❑ ✗ **V718 SPECTRUM EMULATOR v1.4** Which is NOW!! 3 times faster. Requires a spectrum computer once.
❑ ✗ **V719 FREECOPY v1.8** Removes protected games copy protection so that the user can install them on HD.
❑ ✗ **V720 DISKPRINT v3.51** A data base which prints & stores disk labels.
❑ **V723 BOOT INTRO CONSTRUCTION SET** Create excellent Boot Intros.
❑ ✗ **V724 PRINTER DRIVERS v4** This is an updated Drivers disk : Canon LPB, Canon Bubble jet's & Star 9 pin.
❑ ✗ **V725 THE SUPER KILLERS v2.6: BOOT X v4.50** This is the best virus killer disk to date, kills over 262 virus & may be more. Includes many others
❑ ✗ **V727 ART OF MED 2** A another excellent select of Med tunes.
❑ ✗ **V730 ICON MANIA** An excellent selection of Icon clip Art for your WB Disk.
❑ ✗ **V731 AMOSBROT v1.1a** More fractal types which include Logistic Equation, Coast lines & trees.
❑ ⊕ **V732 WB v2.04+ UTILITIES** FPic DCopy, Boot Menu, Scenery, Huge
❑ ✗ **V733 SOFTWARE LISTER v1.6** This program is designed to keep a track of your Software collection.
❑ ✗ **V742 ONLINE v1.4** Program will allow you to find cheats within games.
❑ ⊕ **V743 TERM v2.3** Best Communications program for use with WB v2.04+ (2)
❑ ✗ **F691 THE PROFESSIONAL C MANUAL v3.0** This is the largest collection of documents, examples & utilities in C for the Amiga. It consists of six manuals, with more than 40 chapters, 175 fully excutable examples complete with source codes. (5)
❑ ✗ **V757 AMIGADEX v1.61** Creates / converts your Amiga into a card Database system. Very well done.
❑ ✗ **V758 TEXTPLUS v4.0e** Another update of this excellent Word processor program. Requires Hard drive
❑ ✗ **V759 TEXT ENGINE v3.4** Updated version of the Word processor with **AZSPELL.** Excellent spell checker
❑ ✗ **V761 A-GENE v4.18** The latest version of the popular genealogy database program. By Mike Simpson
❑ ✗ **V762 BBASE v5.5** Database with loads of features and it's easy to use.
❑ ✗ **V770 ACCOUNT MASTER v2.0** Excellent Amos written Account program
❑ ⊕ **V773 WB v2.04 WINDOWBENCH v2.0** Excellent Workbench replacement for all WB v2.04+ Users (2)
❑ ✗ **V777 VOICE CLI v5.2** The idea is to control the CLI/Shell with your own voice.
❑ ✗ **V778 RAYSHADE v4.0** Complex Ray tracing package 2Mb (3)
❑ ✗ **V782 FORMS** Create, Edit, Draw, Colour & print your own forms
❑ ✗ **V783 PROGRAMMING TOOLBOX** Many programs to help in your development efforts (most C but some in basic)
❑ ✗ **V784 AREXX (2)** Two disks which contain Arexx programs & examples
❑ ✗ **V786 PASCAL** This disk contains everything needed to program in Pascal. Includes a68k 68000 assembler & more.
❑ ✗ **V787 PROGRAMMER TOOLS** GadTools to design your user interface to your own programs using all of Amiga DOS 2.0+s new features. Also RegTools
❑ ✗ **V790 ANIMATION UTLS** Includes CyroUtils for splitting, combining, and creating animations from IFF picture files.
❑ ✗ **V791 DIRECTORY ULTS** Includes the most powerful and highly recommended programs which are designed to make CLI & Shell tasks virtually obsolete.
❑ ✗ **V794 GRINDER** A complete graphic conversion package that supports GIF, JPeg, Atari St (Neochrome / Degas), PCX, Targa, TIFF, Ham-E and IFF Format pics.
❑ ✗ **V797 EASY AMOS PROGS (2)** Contain source code for use with Easy Amos.
❑ ✗ **V799 ADVENCED UTILs** SerNet & ParNet, Connect 2 Amiga & share resources via the serial / Parallel ports. Mymenu Puts menus on your Workbench screen.
❑ ✗ **V800 ARCHIVERS II** This disk is packed with the latest Archivers to date.
❑ ✗ **V801 100 PRO PAGE FONTS** Theses fonts are for use with Pro Page & have be checked with the font con-verts program which comes with Pro Page3.
❑ ⊕ **V806 WB v2.04 UTILITES (2)** This is the our second double disk collection of WB v2.04+ utilities that take advantage of the NEW machines capabilities.
❑ ✗ **V809 MEGA CHEATS v2.1** This disk contains the very latest cheats.
❑ ✗ **V811 ELECTROCAD v1.42 & PROTOYPER** Another Updated on the cad / Electronics drawing Programs.
❑ ✗ **V812 CANON** This disk contains Printer Drivers & Conan Studio, Gives better print output for any 9 pin printer.
❑ ✗ **V814 PC TASK v1.11** Is a software IBM-PC Emulator. Allows you to run the majority of IBM software with NO additional hardware. CGA Colour **NEW UPDATE**
❑ ✗ **V815 FILE & HD MANAGEMENT 2 : DirWork v1.62** File copier **MegaD** Another NEW Update on an excellent File copier like the NEW Disk Master Pro II in it's Operations. Also contains loads of other programs to help out (2)
❑ **V817 A500 PLUS EMULATOR** As it sounds will let v1.3 / v1.2 owners run WB v2.04+ software with out any need to purchase to WB v2.0+ chips.
❑ ⊕ **V819 ICONAUTHOR v1.06** Replacement for IconEdit2.0. It can transform IFF or brushes into resized 2-BitPlane brushes or icon files that match the WB v2.04+ colours.
❑ ✗ **V820 BBBBS v5.7** Baud Bandit bulletin Board System Flures include up to 99 file libraries, interface to extra devices
❑ ✗ **V821 SNOOPDOS v1.5** Monitors AmigaDos calls & allows you to see what library, devices, fonts are required.
❑ ⊕ **V822 ABACKUP v3.77** A hard drive backup program that features, multi-drive support, full backup, compression.
❑ ✗ **V823 POWERPLAYER v3.4** Very powerful, user / system friendly module player. It can handle nearly all module formats can read PP modules & comes with it's own cruncher.
❑ ✗ **V826 AHDM v3.4** Hard Drive Menu. When placed in your startup-sequence, offers a 16 page menu, each page having upto 10 possible actions.
❑ ✗ **V827 REPAIR-IT: NewZap v3.3,** A multi sector file editing system. **FIXDISK v1.2,** Recover's as much as possible from a defective disk **DISKSALVE v1.42,** Creates a new file system structure on another device, with as much data salvaged from the original device
❑ ✗ **V841 MODULA-2** Contains modula-2 language on the Amiga.
❑ ✗ **V842 SID v2.01 FILE MANAGER** Sid can be used for various operations, The best file copier on the Amiga.
❑ ✗ **V844 DELITRACKER v1.3** Powerful & system friendly music player. Will play over 40 difference types of modules.
❑ ✗ **V845 Q.M.J v5.31** Will generate julia sets & complex Quaternion Julia slices. Displays mandelbrots.
❑ ✗ **V846 SCOPIOUS MAPPER** An excellent Dungeon mapping program
❑ ✗ **V847 MONEY MANAGEMENT v1.01** The home account package which allows you to keep track of upto 12 accounts simultaneously
❑ ✗ **V848 SLIDESHOW GENERATOR v3.1** Creates slideshows of pictures in various formats for the amiga.
❑ ✗ **V850 FRAC v1.1** is a graphical Role playing game creator.
❑ ✗ **V856 PICTURE TOOLS** Converts Pictures to other formats and styles.
❑ ✗ **V857 POSTSCRIPTERS** Down loads Postscript Fonts for printing on standard Dot matrix printers.
❑ ✗ **V858 MUSIC MAKERS** A selection of programs to produce excellent music productions. Make your own music
❑ ✗ **V859 AUDIO TOOLS (2)** Sound and Audio production utilities.
❑ ✗ **V861 3d DESiGNER** Various 3d graphic production utilities including CLight, DKBTrace and Surf.
❑ ✗ **V865 IMAGE PROCESSORS** Contains Tools to perform a wide variety of Image Techniques (IFF)
❑ ✗ **V866 MANDEL EXPLORER (2)** This is the best collection of Fractal Generating software on the Amiga.
❑ ✗ **V869 ANIMATION ASST (2)** This disk will solve many of your animation problems. Includes ABridge, Players, DA & AnimTools
❑ ✗ **V871 3d HELPER** Are startingout with 3d graphics. This disk is just what you need.
❑ ✗ **V872 ICON TOOL KIT** Just about every tool you could possibly imagine
❑ ✗ **V873 UGFC v1.1** Utilities that will help you translate between Amiga Graphics and other computers.
❑ ✗ **V875 SPACE** Here are utilities to help you study, identify the Stars & celestial objects.
❑ ✗ **V876 SYSTEM v4.1** Checks, test and reports on your computers Memory
❑ ✗ **V879 BEAT DIS MODULES** For use with OctaMED includes a Player
❑ ✗ **V882 MAGNUM v1.4** Another excellent Disk Magazine Creator.
❑ ✗ **V888 TRONI CAD v1.0** The best Cad / Drawning program for your Amiga. Various power functions.
❑ ⊕ **V896 TOOLMANAGER v2.0** Includes the ability to add menu items to the 2 x Tools menu, add WB icons or dock Windows.
❑ ✗ **V897 OCTAMED v4.0** Save disabled version of the full featured OctaMED Pro the commercial product.
❑ ✗ **V899 ABACKUP v2.0** A Powerful backup utility that may be used for Hard Drive backup & File Archiving.
❑ ⊕ **V900 BOOTJOB v1.0** Include functions to store, install, view or execute any bootblock. Can save BB as executable files.
❑ ⊕ **V901 FIM v1.0** IntroMaker to create you own Intros. Features IFF import.
❑ ⊕ **V902 JCGRAPH v1.1** Demo version of the shareware title. Can show data as bar, line, planes, stack, blocks, 2d and 3d ect. Outputs in EPS, 3d geo, AegisDraw and IFF.
❑ ✗ **V903 UEDIT v4.0 (3)** Word Processor with learn modes, Online Help, A teach Mode, copy & paste. This is Now the Complete program
❑ ✗ **V921 COMPUGRAPHIC FONTS** These's fonts will work with DPaint v4.1, ProPage, Pagestream, Pagesetter and Workbench v2.04+. About 30 Fonts (3)
❑ ✗ **V924 PLOT MAP v0.85** An extra for use with draw map v4.0 or v4.1
❑ ✗ **V925 SLAUGHTER CHEATS** Another selection of Hacks & Cheats
❑ ✗ **V928 THE LITTLE OFFICE** One of the best disks at the present time.
❑ ✗ **V936 LETTERS & BOILERPLATE** More Standard letters for you to use as your own or cut & pause.
❑ ✗ **V939 ANIM PB v1.2** Will show long sequences of animations or pictures fromn memory or disk.
❑ ✗ **V942 SCREEN BLANKERS** A disk packed with various screen blankers.
❑ ✗ **V943 LYAPUNOVIA v1.0** A mind-boggingly colourful program that makes pictures from a mathematical formula.
❑ ✗ **V945 PROPAGE 3 ENHANCER** Contains over 40 Genies for use with ProPage 3.0, including useful ones like Make Pie Chart & others. Includes structured clipart for unique borders!
❑ ⊕ **V946 SYSTEM OPTIMIZER** KCommodity gives you memory meters, mouse/keyboard enhancements. REorg will optimize hard and floppy disks for big speed increase. HDMem 2 meg of hard drive space for virtual memory.
❑ ✗ **V947 GNUPLOT** Is a command driven interactive function plotter. Creates stunning plot/graphs of mathematical functions. Req HD & unpacks to 1.6Mb
❑ ✗ **V948 INTUITION BASED BENCH MARKS** A great package with all the popular benchmarks including Sieve, Dhrystone, Savage, IMath & Matrix.
❑ ✗ **V949 TESTS** Contains all of the classic speed tests and system checks we could find. Includes CPU Speed, A full featured system diagnostic tool & more.
❑ ✗ **V950 GAME CONSTRUCTION** ADL is a programming language and run-time environment designed for the convenient writing of adventure games.
❑ ✗ **V951 PROTECTION** Is a collection of utilities aimed to protect your data. Password protects autobooting HD's & Document File. Lock your data files with a passworded incription.
❑ ✗ **V952 X-BENCH v1.0** The complete solution to the all round replacement Workbench. Contains Degrader, Last Hope, View, Virus Checker v6.19, Power packer, DCopy2, APref and Bootintro.
❑ ✗ **V954 WHOM III (3)** An excellent database which covers Star Trek The Next generation, Classic Trek, Star cops, The prisoner, Blake 7 & Tripods
❑ ✗ **V957 TACKS v1.2** Is a collection of utilities to help you create your own self-booting animation disks.
❑ ✗ **V958 CLUB LEAGUE** Is a utility that will allows you to edit and keep track of your divisons/leaggue stats.
❑ ✗ **V959 AMIGA_E** A specific compiler. E is a powerful and flexible procedural programming language
❑ ✗ **V960 CLEO v1.0** Inplementation of a new experimental Pascal like language. Includes Complier+Source
❑ ✗ **V961 CPK v1.0** Will render a space filling representations of atoms in molecules, Handles 3dimensional spheres.
❑ ⊕ **V962 SUPER KILLERS v3.0 (2)** Contains all the latest Virus Killers like BootX v5.23a, VI v1.05, VC v6.20, VZ v2.30 and VT v2.48. Now on 2 Disks.
❑ ✗ **V976 WB v2.04 UTILITIES 6** The next collection of WB v2.04+ utilities.
❑ ✗ **V977 FILE & HD No 5-6** Another excellent collect of HD utilities. (2)
❑ ✗ **V978 NCOMM v3.0** Is a communications program based on Comm v1.34 with lots of very nice enhancements. Has new functions over v2.0

### REGISTERED VERSIONS

❑ ✗ **THE COMPLETE A64 PACKAGE v2.0** With interface & Full Comerical software. Transfers disks from your original 64 drive. This is a Full regersted version of the Software **£44.99**
❑ ✗ **X-SITICH** By Jeff Tullin prints out a picture in the form of a cross sitich pattern for embroidering. **£16.99**

### ERIC SCHWARTS

❑ ✗ **1700 ANTI- LEMMINS (2)** 2Mb
❑ ✗ **2133 GULF WAR CONFLICT** 2Mb
❑ ✗ **2307 AMY AT THE MOVIES II (4)**
❑ ✗ **2311 AMY vs WALKER II (2)** 3Mb
❑ ✗ **2384 AMY AT THE BEACH (2)** 3Mb
❑ ✗ **2477 AMYWALKS**
❑ ✗ **2478 UNSPORTING** 2Mb
❑ ✗ **2500 THE SKY DRIVE** *

### GAMES

❑ **1073 TETRIS ORIGINAL** This is the closest game to the original tetris.
❑ ✗ **1420 DTRIS** If you want a1 or 2 player Tetris this has to be 1 of them.
❑ ✗ **1561 TRITWIS** Contains 1 player, 2 player & 3 Payer game options.
❑ **1747 LLAMATRON GAME 2001** By Jeff Minter & an excellent production.
❑ ✗ **1749 SCRAMBLE** The Original' Remember that old classic game
❑ ✗ **1870 PATIENCE'S** Play vs the computer or another human player.
❑ ✗ **1977 POM POM GUNNER** Shoot down the incoming world war II air planes in this Operation Wolf game
❑ **2018 JETMAN** Another Spectrum classic converted to the amiga. It's JetPak with all the original sounds.
❑ ✗ **2022 SEA LANCE** The first Silent Service type sub war game on PD
❑ ✗ **2054 ATIC ATAC** A rendition of the game from the original Spectrum
❑ ✗ **2162 BATTLE OF BRITIAN WAR GAME** 2 Strategy war games.
❑ ✗ **2164 DUNGEON ON NADROJ** This is the best Dungeons & Dragons Public domain type game. Load Wb
❑ ✗ **2220 STRATEGIC GAMES** Eternal Rome, Lords of Hosts, In Moonshine.
❑ ✗ **2221 MIND GAMES 21** of the best games to challenge your mind not your shooting skills. What a change
❑ **2224 SWORD OF THE WARLOCK** A Bards tales / Eye of the Beholder adventure game packed on three disks. This is Shareware (3) 1Mb (2 Drives)
❑ ✗ **2272 BLACK JACK LAB** Play all the popular versions of Pontoon
❑ ✗ **2278 CARD SHARP** A very professionally presented selection of solitaire type card games. Excellent.
❑ ✗ **2279 SUB ATTACK v1.0** Control the torpedoes & sink the enemy ships as they sail past. **LANDMINE.**
❑ ✗ **2280 DIPLOMACY** Classic strategy game loosely based on World War 1. 2Mb for computer player
❑ ✗ **2313 REVENGE OF THE MUTANT CAMELS** By Jeff Minter The ride of a life time with mutant camels
❑ ✗ **2396 PETERS QUEST** This is truly an excellent platform game.
❑ ✗ **2411 TOTAL WAR** The board game RISK as reviewed in AF.
❑ ✗ **2432 GOLDEN OLDIES** Galaga, Galaxians, Space invaders, Asterlods, Batty & Missle Command.
❑ ✗ **2436 DRAGON TILES v2.5** Mahjong is a ancient chese game where you must remove coloured tiles.
❑ ✗ **2447 COINDROP** Fruit Machine simulator with various gamble modes.
❑ **2448 CRAZY SUE** Another first rate cute school girl platform game.
❑ **2450 SMASH TV - THE RIP OFF** Simular to the original arcade machine. With neat grapgics & sound.
❑ ✗ **2480 AMOS FRUIT MACHINE II** As near as possible to the fruit machine found in Pubs & Arcades.
❑ ✗ **2482 DESCENDER** Is a clone of the classic arcade game Tempest complete with vectorized graphics.
❑ ✗ **2483 INTRUDER** Is a Multi level Berserk clone with smooth graphics.
❑ ✗ **2484 CATACOMB v1.7** A graphical adventure game set on a small island in the middle of the land of EXOUSIA. **NEW**
❑ ✗ **2485 IRON CLADS** (1Mb) Update to the excellent Strategic War Game (2)
❑ ✗ **2491 LEGEND OF LOTHIAN v1.02** is an adventure game in the vein of Ultima.
❑ ✗ **2494 HUNCHBACK** This is a conversion of the old classic game.
❑ ✗ **2498 AMOS CRICKET** Excellent arcade cricket simulator with graphics.
❑ ✗ **2534 BATTLE CARS II** Get behind the wheel of a heavily armed car as you race round courses 2 players with the computer link
❑ ✗ **2535 SUPER PACK MAN 92** This is the best Pack man to date with super smooth scrolling & excellent graphics.
❑ ✗ **2613 DUAL** A 2 player game where you control armoured tanks & rockets.
❑ ✗ **2614 TETREN** Is a 1 or 2 player Tetris game. 2 player is Head 2 Head
❑ ✗ **2615 WAR** Strategy war game in which you control a fleet of space craft.
❑ ✗ **2617 GOLDEN OLDIES 2 : Crook,** Excellent 1 or 2 player version of Frogger. **MouthMan,** version of packMan. **Bi-Planes,** This is the most additive games we have played here 2 player only. **Trail-Blazer,** CMB 64 Classic. **Scamble.**
❑ ✗ **2620 DR.MARIO** A Strange Tetris like game where you move coloured pills down the screen. 3 in a row go's
❑ ✗ **2621 ETERNAL ROME** Start the roman Empire from 32BC. Build fleets, armies & send them into battle.
❑ ✗ **2622 DONKEY KONG** Original platform game in which you must rescue the girl. + Mad Bomber
❑ ✗ **2674 INTERPID** In the Artic ice you control a tank on a mission to rescue hostages in this superb Amiga origional
❑ ✗ **2676 AMI MORIA v5.4** Loads of new features like better graphics, larger dungeons, On screen updates, overview of the dungon's map & Loads more.
❑ ✗ **2710 CLASH OF THE EMPIRES v2.1** Strategical War Game By T.A Sear Shoebury's war Gaming Club. (2)
❑ ✗ **2712 ACT OF WAR** Simular in style to the classic game Laser Squad. You control a team of special troops.
❑ ✗ **2715 TANK ATTACK** This is a 1-4 player version of the Classic Cartridge game Combat. 4 Joysticks can be used.
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❑ **2721 E-TYPE II** Asteriods adventure where you jet around collecting weapons
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❑ ✗ **2724 NEIGHBOURS** This is the best graphical adventure game (2)
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❑ ✗ **2778 SOCCER CARD** Very simple Football Management game.
❑ ✗ **2802 CARD-O-RAMA** Conatins Sea heven, Crib Master, Klondike, Black-jack, Spades, Street & Alleys & Poker.
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❑ ✗ **2826 TALISMAN** Citadel Miniatures dwarfs in a shock horror game done in the best possible taste. (2)
❑ ✗ **2842 CRAZY SUE II** Sequal to the all time best selling PD Game.
❑ ✗ **2843 ROTON** This requies 2 players but is very aditive for people you liked the original thrust game.
❑ ✗ **2851 AMERICAN FOOTBALL COACH** A Management game for American Football Fans.
❑ ✗ **2854 SPACE INVAIDERS II** A compltly revised version of that old classic Space Invaiders.
❑ ✗ **2855 DELUXE PACKMAN** A conversion / revision of PackMan. Features some new additions.
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❑ ✗ **CA5 (5)** Christmas Pack over a & 20th century from father christmas to borders to trees & borders.
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❑ ✗ **AT23 STAR TREK FLEET MANEUVER** NCC-1940 Fly over
❑ ✗ **AT33 THE PROBE II** Anim. **BRID OF PREY**
❑ ✗ **AT34 LEAVING SPACE OFFICE, DOCKING, ATTACK MODE,** Bird of Prey Scout hip in attack
❑ ✗ **1060 STAR TREK *: TNG** This game is by Terry A. Mc Intosh. v1.47
❑ ✗ **1081 THE ULTIMATE STAR TREK (2)** Game by Tobias Richter. Now with English instructions.
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| ❑ ✗ 2524 | MELON / HUMAN TARGET |
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**NEW RELEASE...NEW RELEASE...NEW RELEASE...**
❑ ✗ **V980 KICK v1.3** This program will down grade A500, A600 & A1200 users machines to run software that would not normaly work on them. Ie, turns them into a Workbench 1.3 machine.

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# Software

## DTP

## Professional Page 3.0

In its latest version, Gold Disk's Professional Page is an extremely powerful package offering both flexibility to the advanced user and ease of use to the beginner.

Its ARexx-based Genie functions make possible the automated design of pages and quick control of box and text effects, and its direct hot links to ProDraw 3.0, the Article Editor (a bundled text editor), and ProCalc give it an integrated power, albeit with mostly Gold Disk products.

Drawbacks include the program's sometimes less than intuitive keyboard short-cuts and its strict adherence to boxes, which can restrict design flexibility a little.

In addition, ProPage continues to rely exclusively on CompuGraphic fonts, despite the abundance of excellent Adobe Type 1 shareware fonts, and although Gold Disk have tried to address this problem with a font converter utility, the conversion process will not work with fonts which have .PFM files, insisting instead on the .AFM files found in official (and expensive) Adobe fonts.

These grumbles aside, ProPage 3.0 is a powerful top-end Amiga DTP package which always deserves long and thoughtful consideration before the user plumps for a package.

**Supplier: HB Marketing**
**Phone: 0753 686000**
**Price: £249.95**

## PageStream 2.21

SoftLogik's ugly duckling has, over the last year, swanned its way to the top in the battle with ProPage due to several bug-fixing revisions and a totally new look and feel with v2.2. In terms of features, little now remains to choose between the top packages, but in certain areas, PageStream has a definite edge.

User friendliness is the program's first advantage. Version 2.2 has been thoroughly designed with a Workbench 2.04 look and feel, leading to very intuitive keyboard controls – everything does what you'd expect it to do – and clean, simple requesters.

All these design shenanigans, though not a big issue with prospective buyers, tend to really hit home once the package is used for any length of time.

PageStream is also rather more flexible than its main rival in the range of fonts and artwork it will accept. Both CompuGraphic and Adobe Type 1 fonts are instantly usable, and the package has a font converter to enable the use of Apple Macintosh non-standard Adobe fonts.

When purchased with the Hotlinks Editions package, PageStream has instant Dynamic Data Exchange capabilities to match those offered by ProPage's ARexx Genies, with the added advantage that the system is open ended.

Hotlinks has still to be taken on board by other major software houses, but if it does take off, PageStream's support for it will give the SoftLogik product a whole new dimension.

**Supplier: Silica Systems**
**Phone: 081-309 1111**
**Price: £199**

## Saxon Publisher 1.2

Saxon Publisher is a rather unique product in that it has a very different approach to the user than the other two main packages. The interface is not based on Workbench 2.04 standards and doesn't have the standard easily recognised icons used by ProPage so it is initially a more difficult program to get into.

Saxon does, however, have a few unique tricks up its sleeves. It will, for instance enable the use of some very colourful gradiated fills, both on boxes and as text effects, and has superb irregular box control.

Unlike the other contenders, Saxon frames and boxes can be polygons of any number of sides and decidedly weird shaped text boxes are therefore possible.

This gives Saxon an edge when designing high impact one-off documents such as posters and flyers, but the package is not as suited to multi-page documents as the other big two.

Recommended for the colour fanatic and the user with advertisements or posters in mind, Saxon is probably best left alone when the user is considering magazine or newsletter design. Screen refresh rate is a lot quicker than in either ProPage or PageStream, but Saxon insists on interlace mode, making a flicker fixer and multisync monitor compulsory purchases.

**Supplier: Surface UK**
**Phone: 081-566 6677**
**Price: £249.99**

## PageSetter 2

An old, non-PostScript program for the amateur user, PageSetter 2 is restricted to simple documents and has few of the powerful features found on the high-end packages.

It is affordable and easy to use, but for anything other than low quality fanzines or the ubiquitous parish newsletter it is a DTP no-go.

PageSetter is best looked upon as a purchase for those wishing to dabble in DTP or who want better layout options than those offered by their wordprocessors. A good introduction to Amiga DTP but not a package with which to make your fortune.

**Supplier: HB Marketing**
**Phone: 0753 686000**
**Price: POA**

## PageSetter 3

The first AGA-compatible DTP package, PS3 offers a ProPage-like interface with the basic DTP tools and a very colourful display. The result is a slick, easy to use package capable of a variety of simple DTP tasks.

Though not one for the professional or those looking to produce multi-page documents, PageSetter 3 should be perfectly adequate for the needs of most home and enthusiasts users.

**Supplier: HB marketing**
**Phone: 0753 686000**
**Price: £59.99**

## Agfa starter fonts pack

The first commercial release of Agfa format PostScript fonts on the Amiga, the starter pack contains 12 high quality fonts ranging from the sober Times Bold to the more inebriated Branding Iron. The typefaces are clean and well formed at all sizes and have a touch of class missing from many shareware fonts.

For the price, the user could buy many more shareware examples, but professional users might be happier with a smaller, but better quality, font library.

**Supplier: Megatype**
**Phone: 0759 58988**
**Price: £32**

## E M Computergraphic fonts

The range of shareware PostScript fonts offered by EMC has expanded rapidly from a good selection of SoftLogik-style fonts exclusively for use within PageStream to a large collection of Type 1 and CompuGraphic fonts for use in all packages.

The quality of fonts can vary, but as each five disk selection costing only £12.50 can contain dozens of typefaces, there are usually plenty to suit all tastes.

Some exceptional general purpose fonts can be found among the usual one-off occasional fonts you'd use for one party invitation and never look at again, and when the minimum £60 asking

# spotlight

**This month the beam falls on DTP packages and fonts, and ray-tracing systems. Which are worth the oversized packaging they come in? For the most authoritative, up to the minute information on the best and worst in each field, read on...**

fee for an official Adobe or CompuGraphic font is considered, it is well worth paying £12.50 for only one font you actually like.

In addition, the company stocks the Safari range of fonts, including the excellent Star Trek font collection – an absolute must for all Trekkies.

**Supplier: EM Computergraphic**
**Phone: 0255 431389**
**Price: £12.50 per volume**

## George Thompson Services

The GTS range of fonts is not as wide as that offered by EMC, but the quality of what is on offer is every bit as good. The 37 fonts available on the first GTS font pack, available in CompuGraphic or Adobe Type 1 format, can be used within all the major DTP packages, and contains a couple of useful standard fonts as well as the more whacky occasional typefaces.

More font packs are on the way as the shareware fonts war heats up, so the next few months should be a good time for Amiga DTP users, especially if the quality of future releases matches what we've seen so far.

**Supplier: George Thompson Services**
**Phone: 0707 664654**
**Price: £9.99**

# Ray tracers

## Imagine 2.0

The Impulse offering is a contender for the crown as king of the tracers, and would probably win were it not for two areas in which the program falls down. It's not the easiest to use (a fact not helped by the badly organised manual), and it still has problems with dodgy anti-aliasing which can mar the otherwise excellent output.

In the program's favour, it has a superb, easy on the eye interface and a modular approach which, once mastered, makes the process of creating objects, scenes, and animations very simple.

In particular, the organic modeller (called the Forms editor) is excellent, as is the Action editor, where animation are set up and controlled.

With its interface, special effects, and modular approach, Imagine 2.0 is the first choice for 24-bit animators, though perhaps not the best for static images.

**Supplier: Amiga Centre Scotland**
**Phone: 0896 87583**
**Price: £249.95**

## Real 3D

In its latest incarnation, Real 3D is the best choice both for beginners and those in need of the best quality static images. The program has none of the anti-aliasing problems associated with Imagine 2.0, and is much easier to use, though slightly less flexible than its main rival. In an attempt to steal Imagine's thunder, the latest version of Real 3D now has object morphing and organic modelling, though the latter feature is not as good as Imagine's Forms editor, and it still has by far the best approach to texture and brush mapping. Animation is a little less easy than using Imagine's Action and Stage editors, but once mastered is capable of producing excellent results.

A friendly program with a manual to match and superb output, Real 3D just pips Imagine 2.0 as the best all-round tracer, though the dedicated 24-bit artist will probably end up buying both.

**Supplier: Alternative Image**
**Phone: 0533 440041**
**Price: £290**

## Caligari

Rather more of a 3D modeller than a ray tracing package, Caligari is adept at producing clean, scan line images of great detail, though not as good as Imagine or Real 3D in the organic modelling or ray tracing departments. For producing futuristic, clean cut imagery at speed, though, the Caligari interface is ideal.

Although employing the orthographic display used by most, Caligari's main screen is a 3D plane over which the user positions objects. This approach makes getting one's head round 3D co-ordinates somewhat easier, and is a great help when building scenes such as complete rooms where the relative positioning of objects is crucial.

For animation, the program has path creation and camera controls to match the other top packages, and its output can be found on many a German cable TV screen, but as a tracer for the artist in search of weird effects and original visuals, Caligari is probably not the best choice.

Available in professional variant with an animation module, or a consumer version without many of the power features, Caligari can be either a very expensive TV tool and 3D CAD package, or a good budget 3D modeller for the enthusiast.

**Supplier: Surface UK**
**Phone: 081-566 6677**
**Price: £1,500 (Professional) or £99 (Consumer)**

## Aladdin 4D

The limitations inherent in Aladdin's object creation tools make it less of a mainstream contender than a specialist in its field, which is the creation of unique gases and superb texture control.

Using Aladdin, it is possible to generate images which no other ray tracer could produce without the aid of a paint package to retouch and add gases. The only big drawback is speed, which can be slow when the package's more advanced features are brought into play.

**Supplier: Micro-PACE UK**
**Phone: 0753 551888**
**Price: £269.99**

# Classifieds

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◆ 2 x 8Mb Boards with 2Mb £75 each. 1 HD Control with 40Mb HD £150. Fit A2000/1500. Tel 081 560 2920.

◆ Amiga 500, 3 Meg, Action Replay Mk3, includes games. £275 ono. Jon 071 511 6287.

◆ Amiga 2000, GVP HD 52Mb, 5Mb Ram, Monitor, Printer. Tel 0753 833157.

◆ A2000 9 megs, 2300 Genlock, Hard disk, Midi Interface, games £550. 0235 848412.

◆ CDTV Games, H/Baskervilles, D/Crown, P/Killer, Raffles, £10 each. 0534 24552.

◆ Wanted Sentinel & any Spreadsheet (not DGCalc) Phone Bernie 0273 591122.

◆ A500 Cartoon Classics £195, 1081 Monitor £145. Phone Robin 081 204 4145.

◆ GVP A530 120Mb with 4 meg Simm £800. Phone Robin 081 204 4145.

◆ Amiga 2000D, GVP 52Mb Hard Drive, 5Mb Ram and more. Tel 0753 833157.

◆ 50+ Commodore Computing International magazines £15. Tel Tunbridge Wells 0892 527869.

◆ Vortex Atonce IBM Emulator for A500 £125. Tel 0892 527869.

◆ Gravis Mousestick sell £45 ono. Gary Green, Thormethwaite, Locbmaben, Dumfriesshire DG11 1JH.

◆ Amos the Creator £16 also Easy Amos £20. 0202 483137.

◆ Action Replay Mk11 (2000) unopened only £40. Phone Philip 051 327 8068. Caller collects.

◆ Midi Interface for A500 £12. Phone (0262) 671125 after 4pm.

◆ Campaign Amiga war game £15. Tel 0276 27871.

◆ KCS PC Power Board V.4.5 for Amiga A500 MS Dos, Dos Shell. Opened but unused. Cost £219 will sell for £100. Cornwall 0579 370257.

◆ Amiga contacts wanted. Craig, 60 Sunnymead Road, Yardley, B'ham B26 1LJ.

◆ ICD Adspeed 14.3 MHz Accelerator £99. Tel 0908 316025 after 6.30pm.

◆ A500 Screen Gems pack, extra games 1Mb. £175. Tel 021 453 4889.

◆ Amiga 1500, Monitor, Printer, £500. Bargain! No offers. Phone 0962 824526.

◆ Mitsubishi Self Powered 5 1/4" External Disk Drive £60. 0302 350175.

◆ Wanted original Alien Breed. Ring Andy 0525 372217 x3371 working hours.

◆ Protext 5.5, £60 ono or swap for Wordworth 2. Tel (03657) 21826.

◆ Wanted Amiga contacts. Write to LionHeart, Condores 318, URB.San Jose, Bellavista-Callao, Peru.

◆ A500 1.3, 1 meg, Colour Monitor, games, wordprocessor, £375. (0604) 415206.

◆ Wanted Chaos Strikes Back Editor for Amiga. Phone (0492) 531003.

◆ A590 Hard Drive fitted with 180 meg SCSI Hard Disk and 2 meg of Ram £450 ono. Phone (0492) 531003.

◆ Amiga contacts wanted for games/PD, swaps etc. Send Disk list, Pete, 8 Brock Avenue, Bolton, Lancs BL2 6JP. 100% reply. Genuine.

◆ Roctec 52Mb Hard Drive with 4Mb memory £235. 0443 201731.

◆ NTSC-A500, 4 meg, 1 meg Agnus, WB2.04, £400. Michael VandenBos, 1435 Stadacona, Moose Jaw, SK, S6H 7J5, Canada.

◆ Amiga 500 with 1Mb Ram, GVP 52Mb Hard Disk Drive, 24 pin Mono Printer, some software and magazines. Cost over £1150 new! Will split! Any offers considered. Genuine reason for sale! All in V.G.C. Tel 0732 884152.

◆ Wanted Amiga's Nigel Mansells GP by Martech. Tel 0780 57523.

◆ Wanted Scala 500 and Big Alternative Scroller. Tel Swansea 0792 885477.

◆ Graphic Artists wanted: Giorgio Piazza, Via T.Vecelio, 21, 20052 Monea (MI) Italy.

◆ A500+ Second Drive, 160 games and utilities including DPaint4, Amos, Wordsworth. Excellent condition, boxed as new, £350 ono. Tel 041 887 0536.

◆ Marcam Frame Grabber £250. Syntronix Hi 8 Editman £350. Tel 0349 853943.

◆ Amiga 500 Plus with GVP Impact Series II 52Mb Hard Drive, Star LC-10 Printer, 4Mb memory, extra floppy drive, ProPage v3.0, ProWrite v3.2.3, Delux Paint III and more games than you could ever play! All V.Good condition, original packing. £650 ono. (0903) 505154.

◆ New Amicon BBS needs callers 9pm-7am, 7 days. 0983 299144.

◆ Penpals wanted Worldwide. Oystein Sorbo, Fantoft Studby, C-910, 5036 Fantoft, Norway.

◆ Godfather and F1 GP for sale or swap. Phone (0326) 318003.

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◆ Accommodation in Prague offered to Amigists, £5. Fax Ludek 42-2-4719517.

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◆ Amiga contacts wanted. D.King, 14 Sandy Vale, Haywards Heath, Sussex.

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◆ For Sale Action Replay MkIII, new, £40. Tel 0202 893219.

◆ Swap Music, demos, with: Dimitrios Giannopoulos, L.Nikis 21, 54623 Thessaloniki, Greece.

◆ Amiga games + serious software for sale. Phone 0482 668528.

◆ Amiga magazines for sale; wanted Nintendo Gameboy games. Tel 0256 704932.

◆ A590 Hard Drive, 2Mb Ram, £180. Phone Les, Sheffield 0742 400996.

◆ CDTV, 1 year old, £200. 0733 238712 evenings only.

◆ DPaint4 £40 ono. Wordsworth2 £70 ono and other software. Tel 081 871 9422.

◆ Amiga A600 Music contacts wanted. Tel Nick on 0633 221316.

◆ CBM A2320 Flicker Fixer £199 ono. Phone Simon 041 776 6422.

◆ NEC 3FG 15" Multisync Monitor £399. Phone Simon 041 776 6422.

◆ Contacts wanted. Write to Sean, 87 Lakemead, Ashford, Kent TN23 2XY.

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# HARD TIMES

**If you're just about recovering from the initial investment in a new machine it could be time to talk add-ons. Hard times brings you the definitive guide to the system-building basics**

## Monitors

For most people computing invariably starts with a portable television as their window into the virtual new world. Although fine for games, there comes a point when a portable simply doesn't do the machine or the user justice.

Literally any productivity package is taken to the next dimension of usability with the addition of a monitor. Wordprocessing for example becomes a pleasure rather than a blurred, squinting exercise in sado-masochism.

In short, a decent monitor is worth every penny and in monitor terms they don't come much better than the Philips 7CM3209 multisync. This particular unit is ideal for new owners equipped with either A600 or A1200s, as both machines can take advantage of the productivity modes offered by the ECS and AGA.

Although you may be tempted to plumb for a med-res monitor such as the Philips CM8833 or Commodore 1084S, don't even consider it! There's literally no comparison between a med-res and multisync and after you've used a multisync having to endure a med-res monitor is a real pain.

And for the first time ever a quality multisync – alias the 7CM3209/Brilliance – actually comes in cheaper than its med-res alternative, and stranger still, both units are from the same company – weird...

If you're working on an older machine which doesn't boast an option to employ productivity my personal choice is definitely the new style Commodore 1084S – at just £199 its easily the best value – and in my opinion the best med-res regardless of cost.

**Philips Brilliance 7CM3209**
**Price: £258**
**Supplier: Silica Systems**
**Tel: 081-309 1111**

## Printers

With the vast array of printers on the market and the varied requirements of the average punter simply singling out a particular printer as the best buy across the board would be at best a rather hit and miss exercise. However there are a few basic pointers which could come in handy.

For those with an occasional need for hard copy, a dot matrix is the ideal choice. However, if at all financially possible try to avoid the temptation of investing in the cheapest route possible, namely a 9-pin.

Although 9-pin printers have come a long way it must be said that with the relative price difference being so small a 24-pin is a definitely a more attractive proposition.

For the extra investment you'll receive much higher quality output especially on graphic files, and with many 24 pins offering colour upgrade kits the difference between the two can really pay off later on – if and when you decide to invest. The benefits don't stop with simple graphics, in fact all aspects of Amiga productivity benefit hugely from the extra clarity available from 24 pins.

And if you do intend to invest in the aforementioned Brilliance Philips multisync you'll soon become accustomed to high quality display and expect it on your hard copy as well as on-screen.

## Floppies

OK, I did get a little carried away introducing the monitor bit. In my unbridled excitement I forgot the unmitigated misery that running a single floppy system can be.

Although often overlooked in the rush to invest in a hard disk, an extra floppy comes second only to the mouse in the hierarchy of important pluggy in things.

In my humble opinion the Evesham Micros External Drive is the ideal "does the job" product. Unlike many of the drives on the market there are no frills, no unwanted gadgetry, just a basic dependable slimline drive.

Like any decent drive, a disable switch awaits the calling along with the option to daisy-chain additional units. If you can live without funky LEDs, flashing lights and anti-virus are perfectly happy with a drive that will plod along long after you've shot your final assortment of mutie scum, the Evesham is ideal.

**External drive**
**Price: £47.99**
**Supplier: Evesham Micros**
**Tel: 0386 765500**

## Modems

If you've caught the comms bug that the media has been screaming about for months, a modem may well be on the shopping list. If so, here's a few points that the novice might well bear in mind prior to investing.

Unlike most things in life it's not wise to skimp from the offset. Although it's tempting to save some cash initially you'll end up paying for this apparent saving tenfold later on in the form of ridiculously expensive phones bills.

Although there are hundreds of modems on the market it's wise to stick to units which offer baud rates at or above 2,400. Even at this speed you could be throwing cash away in the long term as the modern standard tends to be 9,600 rather than the now slightly outdated 2,400.

My advice is if you can easily afford a 2,400 modem, save your money and invest in a 9,600. If you can only just manage a 2,400 I'd think long and hard about comms as a potential pastime – believe me it ain't as interesting as the popular press would have us all believe...

## Mice

Although I must admit the Commodore mouse has come on leaps and bounds of late thanks to the A600, 1200 and 4000, there's still room for improvement, especially if you plan to use your machine primarily in an artistic vein.

If you fit this particular bill my personal choice would be the Mega Mouse from Gasteiner. Although a truly excellent modelthe Mega Mouse still manages to retail as one of the cheapest replacement mice on the market.

Although in technological terms something of an old-timer the Mega Mouse still offers an impressive 290dpi which puts it alongside mice five times the price when it comes to accuracy and overall performance.

It's true that it's opto-mechanical design means the occasional cleaning of ball and rollers is required, but that's a small price to pay considering the saving.

Aside from the accuracy, one of the most appealing aspects of the Mega is its excellent ergonomic design which fits snugly into the palm while the perfectly weighted buttons wait attentively with micro-switches at the ready.

**Mega Mouse**
**Price: £10.95 without mat and holder**
**Supplier: Gasteiner**
**Tel: 081-365 1151**

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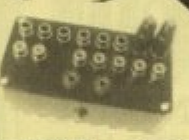


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Your at-a-glance guide to shopping through the pages of AC. All our advertisers, all their products, and all in an easy to find format. Your Amiga Market Locator makes finding that bargain infinitely easier.

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